S. HRG. 103–780

S. 1427, THE ANTARCTIC SCIENTIFIC RESEARCH, TOURISM, AND MARINE RESOURCES ACT OF 1993, TO IMPLEMENT THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

Y 4.C 73/7:S.HRG.103-780

S.1427, The Antarctic Scientific Re...

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

OCTOBER 20, 1993

Printed for the use of the Committee on Commerce, Science, and Transportation

U.S. GOVERNMENT PRINTING OFFICE

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S. 1427, THE ANTARCTIC SCIENTIFIC RESEARCH, TOURISM, AND MARINE RESOURCES ACT OF 1993, TO IMPLEMENT THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

WEDNESDAY, OCTOBER 20, 1993

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The committee met, pursuant to notice, at 2 p.m. in room SH–216, Hart Senate Office Building, Hon. John F. Kerry presiding.

Staff members assigned to this hearing: Lila H. Helms, professional staff member, and Penelope D. Dalton, senior professional staff member; and John T. McCabe, minority professional staff member, and John A. Moran, minority staff counsel.

OPENING STATEMENT OF SENATOR KERRY

Senator KERRY. The hearing will come to order.

I apologize for being late. Good afternoon and welcome to what may be one of the most important hearings the Senate will conduct this year on international environmental protection. Today we will hear testimony on the Antarctic policy of the United States and legislative proposals to implement the Protocol on Environmental Protection to the Antarctic Treaty, a subject that we have been waiting for sometime to make real progress on.

Antarctica is often described as the ultimate pristine wilderness, and forms a unique and critical part of our global environmental system. The continent composes about one-tenth of the Earth's land surface and about 98 percent of its surface is covered by ice. It is home to many species of flora and fauna including whales, seals, and penguins. Its remote environment has attracted explorers, resource prospectors, scientists, and most recently large numbers of tourists.

The special values of Antarctica are reflected in the Antarctic Treaty of 1959. This agreement forms the foundation for the protocol and guarantees free access and research rights for the international community. The Antarctic is especially important to science because its ice mass provides evidence of past global change, its atmosphere supports the most intense Sun-Earth interactions, and its pristine environment serves as the world's early warning system to global climate and atmospheric changes.

The protocol builds on the Antarctic treaty by extending and improving Antarctic environmental protection. The need to improve

environmental protection came as a result of evidence that some nations were preparing for the possible exploitation of Antarctic mineral resources. The protocol reaffirms the designation of Antarctica as a special conservation area devoted to peace and science, and requires that activities be planned so as to limit adverse impacts on the environment. The protocol requires that environmental impact assessments be prepared for proposed activities that are likely to have more than a minor or transitory impact, and bans nonscientific Antarctic mineral activities for a minimum of 50 years. Finally, the protocol acknowledges the impact of the growing number of tourists who travel to the Antarctic to witness its wild beauty and rugged terrain, but who represent a threat to the fragile Antarctic ecosystem.

Although the protocol was signed over 2 years ago by the United States, and the Senate passed a resolution in support of ratification over 1 year ago, legislation to implement the protocol has yet to be enacted. Although five nations already have ratified the protocol, none has passed implementing legislation because they are waiting to see what action the United States will take. Therefore, it is urgent that we move quickly to pass legislation that the other ratifying nations can use as a model. This legislation must include strong environmental protection requirements, but it also must permit critical scientific activities to continue. Science and environmental protection are not mutually exclusive, thus our challenge is to craft a balance between these two important Antarctic considerations.

Earlier this year, I introduced the Antarctic Scientific Research, Tourism, and Marine Resources Act of 1993 to implement the protocol. This bill calls for comprehensive environmental consideration in the conduct of U.S. scientific research, tourism, and other activities in the Antarctic. The legislation maintains the role of the National Science Foundation as lead Federal agency in the Antarctic, fulfills U.S. obligations under the protocol, and incorporates a provision for citizen suits. Additionally, the bill exceeds the requirements under the protocol in the areas of takings of animals and plants, of waste disposal, and of marine pollution. It is my belief that, as one of the founders of the Antarctic treaty system, the United States has an obligation to enact strong implementing legislation. Further, if we can improve the protection by going beyond the minimum standards established by the protocol, I believe it is beneficial to do so absent some clear and convincing evidence, or compelling reasons for not doing so.

Last week, we received a draft bill from the administration entitled the "Antarctic Environmental Protection Act of 1993." While I am pleased that we finally have an administration bill to discuss, I have questions about provisions of the bill dealing with waste disposal and the fact that the administration's interagency process could not reach consensus on the question of how to treat citizen suits. I look forward to working with the administration to resolve these outstanding issues. Mr. Chairman, your comments, please.

OPENING STATEMENT OF SENATOR HOLLINGS

The CHAIRMAN.Today's hearing addresses a growing concern of the American scientific community and environmental groups—en-

suring timely enactment of U.S. legislation to implement the Protocol on Environmental Protection to the Antarctic Treaty. The protocol was signed by the United States 2 years ago and approved by the Senate last Congress, yet implementing legislation remains to be completed. In addressing that task, our primary goal will be to provide a balanced approach that preserves both the environment and the ability to conduct scientific research in the Antarctic.

Having had the opportunity to visit Antarctica, I can attest to its special beauty and pristine wilderness. While on the continent, I was impressed by a number of dedicated scientists operating under difficult circumstances to help us to understand better our global environment. The Antarctic provides scientists with a truly unique laboratory to conduct activities that cannot be done anywhere else. However, as important as these scientific activities are, we must be honest and accept the fact that the U.S. Antarctic Program has not always been the best steward of the Antarctic environment. While much has been done in the last few years to improve U.S. operations in the Antarctic, the Antarctic Scientific Research, Tourism, and Marine Resources Act of 1993 will help to ensure that present and future U.S. activities by scientists, explorers, tourists, and others comply with the highest environmental standards. Scientists themselves understand the critical importance of preserving the Antarctic as a natural reserve for generations to come, and I am confident that we can find a workable solution.

Today's hearing provides us an opportunity to evaluate U.S. Antarctic activities and to explore how we can achieve a balance between environmental protection and the conduct of science. I welcome our witnesses and look forward to working with the administration, scientists, tour operators, and conservation groups in meeting this important goal.

Thank you, Mr. Chairman.

Senator KERRY. Thank you, Mr. Chairman. Let me close by stating that because ours is the Nation with the most extensive Antarctic Scientific Program, our delay in enacting legislation to implement the protocol on environmental protection is inconsistent with our Antarctic policy objectives. Furthermore, when the protocol comes into force, it will mark a new threshold in international environmental protection and cooperation, not only for Antarctica but for all global commons. Thus our responsibility to implement the protocol is both national and international in nature. It is a responsibility that the Vice President and the President talked about in their campaign, and now we have a chance to put this commitment into effect. We have a challenging responsibility before us, and I call upon all parties to help us enact legislation which preserves and advances both the environmental quality and scientific values of the Antarctic.

Senator Gorton.

Senator GORTON. No opening statement, Mr. Chairman.

Senator KERRY. Thank you very much. Would you take over? I need to take a phone call for a minute.

We begin with the first panel, Mr. Tucker Scully, the Director of the Office of Ocean Affairs, and Dr. Cornelius Sullivan, Director of the Office of Polar Programs. Gentlemen. The testimony will be

placed in the record as if read in full, and we welcome your opening, Mr. Scully, if you want to lead off.

STATEMENT OF TUCKER SCULLY, DIRECTOR, OFFICE OF OCEAN AFFAIRS, DEPARTMENT OF STATE

Mr. SCULLY. Thank you, Mr. Chairman.

Mr. Chairman, I am very pleased to be here before this committee to discuss the legislation to implement the Antarctic protocol. We much appreciate the initiative in scheduling this hearing, as well as the flexibility that the committee has shown in its scheduling.

Senator Kerry described very well, I think, the provisions of the protocol itself, so I will not dwell upon a repetition of those provisions. Suffice it to say that the protocol represents innovative new provisions, building on the Antarctic treaty, to protect the Antarctic environment and to promote the conduct of scientific research there.

The step that remains in order for the United States to become a party to this important agreement is the enactment of implementing legislation. As Senator Kerry also noted, the Senate has already given its advice and consent to ratification.

For these reasons, Mr. Chairman, we in the administration have been working to develop agreed comprehensive legislation to implement the protocol. We have prepared a draft bill which is before the committee.

The bill, entitled the Antarctic Environmental Protection Act of 1993, would repeal two pieces of existing legislation, the Antarctic Conservation Act of 1978, and replace that act with legislation which enacts measures to implement the provisions of the protocol, and it would also repeal the Antarctic Protection Act of 1990 and create a new prohibition, permanent prohibition on Antarctic mineral resource activities in Antarctica, consistent with the protocol.

As Senator Kerry also noted, work has been completed on all provisions of the draft administration bill with the exception of one section, that which deals with judicial review and citizen suits. Additional work will be required to complete work on that section.

We also agreed very much with the need to move rapidly in terms of implementing this protocol and therefore enacting the necessary legislation. For that reason, we have conveyed to the committee the draft administration bill as it stands—that is, complete except for the one section on which work remains. The draft administration bill as transmitted represents and reflects the full agreement of all agencies.

In this summary, Mr. Chairman, I would like to address the provisions of the draft administration bill from the point of view of the provisions of the protocol itself. The prepared statement addresses them more in terms of the sequence in which they appear in the draft administration legislation.

I would note also that, like the legislation introduced by Senator Kerry, our legislation rests on the premise that the U.S. Antarctic Program will continue to be managed and funded on a single-agency basis by the National Science Foundation, but insofar as the provisions of the bill before you, the administration bill, first, the bill prohibits mineral resource activities as indicated, prohibits any

activity relating to Antarctic mineral resources in Antarctica, except for scientific research.

The responsibility of the regulatory authority with respect to this prohibition is lodged in this bill with the National Oceanic and Atmospheric Administration of the Department of Commerce, with NOAA.

With respect to environmental impact assessment, article 8 of the protocol and annex 1 of the protocol set forth detailed requirements for environmental impact assessment not only for governmental activities but also for nongovernmental activities in Antarctica, including tourism.

The draft administration bill would implement these provisions with respect to Federal agency activities in Antarctica by applying the National Environmental Policy Act of 1969, NEPA, to such activities. The legislation leads to regulation, and does not prejudge the way in which activities conducted jointly by the United States and other parties to the protocol in Antarctica will be subject to environmental impact assessment.

With respect to nongovernmental activities in Antarctica, including tourism, the legislation authorizes the Environmental Protection Agency to promulgate regulations necessary to implement the EIA procedures of the protocol.

Annex 2 of the protocol includes detailed provisions for the flora and fauna, including prohibitions on the taking of, or harmful interference with any native plant, any native mammal, any native bird in Antarctica, except in accordance with a permit. Any permits for the taking or harmful interference with such species may only be issued in accordance with very strictly limited criteria, and only generally for scientific purposes.

Annex 5 of the protocol also adds protections for flora and fauna in its provisions for dealing with protected areas in Antarctica. With respect to agency responsibilities on this point, Mr. Chairman, the draft legislation would accord to the National Science Foundation the regulatory authority with respect to conservation of fauna and flora, and with respect to protected areas, including the authority to issue permits for individual U.S. scientists.

However, with respect to any permits that might need to be issued for the taking or harmful interference with flora and fauna incidental to the operation or construction of U.S. facilities in Antarctica, the authority of the National Science Foundation to issue permits would also require the concurrence of NOAA, the National Oceanic and Atmospheric Administration.

Annex 3 to the protocol includes detailed provisions for a waste disposal and waste management in Antarctica. The draft administration bill incorporates detailed provisions on these points. First, it reiterates the protocol's specific requirements with regard to retrograde of waste, with regard to incineration, with regard to waste disposal on land and at sea, including sewage discharge, provisions relating to storage of waste, and provisions relating to the prohibition of the introduction of certain products into Antarctica.

The legislation also provides that regulations be issued on incineration which take fully into account the Clean Air Act, and article 3 of the protocol, as well as the specific obligations of annex 3 itself, and require issuance of permits for any incineration.

Third, on waste, the legislation would include a requirement that regulations be issued specifying specifically which waste must be removed from Antarctica and not disposed of there, and finally, the legislation would prohibit, except in accordance with a permit, all disposal of waste in Antarctica, including a requirement that permits for sewage discharge take fully into account the provisions of article 3 of the protocol as well as the specific provisions of the relevant annex, annex 3.

With respect to the regulatory responsibilities in this area, the National Science Foundation, with the written concurrence of EPA, would have the authority to develop waste disposal and waste management regulations. The authority to issue permits would be lodged with NSF in consultation with EPA.

With respect to marine pollution, the legislation provides that—and this is annex 4 of the protocol—provides for the implementation of that annex by amending the act to prevent pollution from ships, which is the act that implements the relevant international convention, the MARPOL 1973–78 convention, and lodges the regulatory authority in this area with the U.S. Coast Guard.

With respect to the environmental principles of article 3, Mr. Chairman, the draft administration bill would include article 3 verbatim as a declaration of U.S. policy.

It would include a finding indicating that because of the legally binding character of article 3, residual regulatory authority is included in the legislation to allow for action to implement article 3 should a situation arise that is not addressed by the provisions of the annexes.

Finally, it would grant to each responsible agency, each agency with regulatory authority, residual authority to issue regulations to deal with matters when it determines that there is a matter that is not covered by the annexes to the protocol, or in situations where that agency believes that stricter regulatory action is required in relation to that specific subject area.

There are additional provisions in the legislation, Mr. Chairman, and I have addressed them in a prepared statement, regarding oversight of U.S. activities in Antarctica, with regard to monitoring, with regard to enforcement.

I would mention in particular, before concluding, Mr. Chairman, the issue of tourism and nongovernmental activities in Antarctica. First of all, the provisions of the protocol itself all apply to tourism as they do to other human activities in Antarctica, so the protocol itself significantly regulates tourist activities as well as other nongovernmental activities.

In addition, the draft bill proposed by the administration would include a requirement that vessels transporting passengers to Antarctica comply with the provisions of the marine pollution annex, annex 4 to the protocol, second, a requirement that those who are organizing expeditions to Antarctica fully inform all expedition members as to the obligations with which they must comply, and finally, a provision calling for a study, an interagency study to be completed within 2 years, to address the issue of tourism and make recommendations where appropriate for additional actions.

Mr. Chairman, in conclusion, the draft administration legislation which is now before you seeks to build upon and synthesize ideas

that are contained in S. 1427, as well as draft bills that have been introduced into the House. We believe that the administration's proposal represents a balanced and innovative basis for U.S. implementation of the protocol.

The consensus achieved by the agency certainly represents a product of long and concerted effort. We are committed to redoubling our efforts to complete the work on the remaining section of the legislation as rapidly as possible, and we look forward to working with you and your colleagues, including those on the House side, to enact implementing legislation, which as you mentioned, Mr. Chairman, will set the standard for all parties to this important new environmental agreement.

I thank you very much.

[The prepared statement of Mr. Scully follows:]

PREPARED STATEMENT OF R. TUCKER SCULLY

Mr. Chairman: I am pleased to appear before the committee to discuss legislation to implement the protocol on environmental protection to the Antarctic treaty. We appreciate your initiative in arranging this hearing and, in particular, your flexibility as to its timing.

Let me begin with a few words about the protocol itself. The Antarctic treaty consultative parties adopted and opened for signature the protocol on environmental protection to the Antarctic treaty, including four annexes, on October 4, 1991, in Madrid.

All 26 consultative parties, including the United States, have signed the protocol. The consultative parties adopted an additional annex to the protocol at Bonn on October 17, 1991. The Senate gave its advice and consent to ratification of the protocol, including the annexes, on October 7, 1992.

The protocol builds upon the Antarctic treaty to extend and improve the treaty's effectiveness as a mechanism for ensuring the protection of the Antarctic environment. The protocol is intended to replace existing recommendations under the treaty addressing the protection of the Antarctic environment, including the agreed measures for the conservation of Antarctic fauna and flora. It does not affect other agreements on the Antarctic to which the United States is a party, such as the Convention on the Conservation of Antarctic Marine Living Resources and the Convention on the Conservation of Antarctic Seals.

The protocol designates Antarctica as a natural reserve, devoted to peace and science. It prohibits mineral resource activities, other than scientific research, in Antarctica. Its annexes, which form an integral part of the protocol, set out specific rules on environmental impact assessment, conservation of Antarctic fauna and flora, waste disposal and management, the prevention of marine pollution, and area protection and management. The protocol establishes a committee for environmental protection to provide advice and recommendations to the Antarctic treaty consultative meetings on the implementation of the protocol, and includes provisions on settlement of disputes.

As noted earlier, the United States signed the protocol upon its adoption two years ago, in October, 1991. The Senate gave its advice and consent to the ratification of the protocol a year ago, in October, 1992. Enactment of implementing legislation is the remaining step required for the United States to deposit its instrument of ratification and, thereby, become a party to the protocol. (To date, five other signatory nations have become parties—Spain, Ecuador, Peru, France and Norway.)

Early entry into force and implementation of the protocol constitutes the highest priority of our Antarctic policy. For this reason, we in the administration have been working to develop agreed comprehensive legislation to implement the protocol.

We have prepared a draft bill, entitled the Antarctic Environmental Protection Act of 1993, which would repeal the Antarctic Conservation Act of 1978 and replace it with legislation which enacts measures to implement the provisions of the protocol and annexes. It would also repeal the Antarctic Protection Act of 1990 and create a new prohibition on mineral resource activities in Antarctica consistent with the protocol.

Work has been completed on all provisions of the draft bill, with the exception of one section—that dealing with judicial review and citizen suits. Additional work will be required among the agencies to complete that section.

We fully concur with the need to move rapidly to enact comprehensive implementing legislation and do not wish to see further delay in the initiation of congressional consideration. Therefore, we have conveyed to the committee the draft administration legislation as it stands, without the section (section 14 on judicial review and citizen suits) that remains to be completed. The draft administration bill, as transmitted, reflects the full agreement of all agencies.

The text of the draft administration legislation is also attached to this testimony and let me turn to its salient features.

Findings, purpose and policy:

The legislation would find, in conformity with article 2 of the protocol, that Antarctica is a natural reserve, devoted to peace and science.

The purpose of the bill is to provide legislative authority to implement the protocol.

The legislation would incorporate the environmental principles of article 3 of the protocol as a statement of U.S. national policy.

Prohibited acts:

Section 4(a) of the bill lists prohibited actions; section 4(b) lists actions that would be prohibited unless carried out with a permit.

Section 4(a)(1) would make it unlawful for any person to engage in, provide assistance to, or knowingly finance any Antarctic mineral resource activity. This provision reflects article 7 of the protocol, which states: "Any activity relating to mineral resources, other than scientific research, shall be prohibited." This legislation would repeal the Antarctic Protection Act, which was intended as an interim measure pending entry into force of an international agreement providing an indefinite ban on Antarctic mineral resource activities. Article 7, which has no termination date and is not reviewable for fifty years following entry into force of the protocol, constitutes such an indefinite ban.

The legislation would prohibit several activities concerning waste in Antarctica. It would be unlawful to: introduce certain specified products; to dispose of certain types of waste, except through removal; to engage in open burning of waste after March 1, 1994; and to dispose of any waste onto ice-free land areas or into fresh water systems. In addition, section 4(b) of the legislation would prohibit disposal of any waste in Antarctica without a permit, except as otherwise authorized under the act to prevent pollution from ships. All of these prohibitions are based on provisions of annex of the protocol.

Section 4(b) of the legislation would prohibit any person from introducing into Antarctica any member of a non-native species and from engaging in any taking or harmful interference in Antarctica without a permit, in conformity with annex II of the protocol.

Section 4(b) would also prohibit entering specially protected areas without a permit, in conformity with annex V of the protocol.

Regulations:

The legislation would authorize the NSF Director, the Secretary of Commerce, the EPA Administrator, the Secretary of State, and the Secretary of the Department in which the Coast Guard operates to promulgate regulations to implement the provisions of the protocol. In particular, the legislation would provide for:

- The NSF Director to promulgate regulations on protection of flora and fauna, and of specially protected areas, in accordance with specific requirements drawn from annexes II and V of the protocol;
- The NSF Director, with the concurrence of the EPA Administrator, to promulgate regulations on waste disposal and management, in accordance with specific requirements drawn from annex III of the protocol;
- The Secretary of Commerce to promulgate regulations on Antarctic mineral resource activity;
- The Secretary of State to promulgate regulations on the filing of advance notice of expeditions to and within Antarctica; and
- The Secretary of the Department in which the Coast Guard is operating to promulgate regulations on marine pollution, including contingency planning and response action.

The legislation would also provide authority to promulgate additional regulations to implement the protocol, including regulations to address a situation not covered by the annexes to the protocol or in which a more rigorous or supplemental requirement is necessary.

Permits:

The legislation would set out terms and conditions on the issuance of permits by the NSF Director for activities otherwise prohibited under section 4(b). The legislation would require the director to consult with the EPA Administrator before issuing a permit to dispose of waste, and to receive the concurrence of the Secretary of Com-

merce before issuing a permit for a taking or harmful interference in connection with the construction or operation of scientific support facilities.

The bill provides that the Director may modify, suspend or revoke any permit where there is a change in conditions that makes the permit inconsistent with the provisions of the legislation or the protocol.

Environmental impact assessment:

The legislation would implement the provisions of the protocol on environmental impact assessment of federal agency activities in Antarctica by applying the National Environmental Policy Act of 1969 to the activities, as specified in the legislation. The legislation leaves to regulation, and does not prejudge, the way in which activities conducted jointly by the United States and other parties to the protocol in Antarctica will be subject to environmental impact assessment. In this manner, the unique considerations applicable to such activities in Antarctica may best be taken into account.

The protocol requires environmental impact assessment of non-governmental activities, as well as governmental activities, in Antarctica. The legislation would authorize the EPA Administrator to promulgate regulations to provide for the environmental impact assessment of non-governmental activities, including tourism, consistent with the provisions of article 8 of annex I to the protocol.

Monitoring:

The legislation would authorize the NSF Director, in consultation with the EPA Administrator, to promulgate regulations to provide for procedures to assess and verify the environmental impact of activities that proceed following a determination that they will have more than a minor or transitory impact on the Antarctic environment or dependent and associated ecosystems.

Marine pollution:

The legislation would amend the act to prevent pollution from ships, to implement the protocol's provisions on marine pollution contained in annex IV.

Representation:

The legislation would provide that the Secretary of State, with the concurrence of appropriate agency officials, would appoint the U.S. Representative to the Committee for Environmental Protection created under the protocol.

Oversight:

The legislation would provide that the Secretary of State, in conjunction with the EPA Administrator and the Secretary of Commerce, will inspect the U.S. Antarctic Program at appropriate intervals of between two and five years. The inspection team will conduct on-site inspections of stations, field camps, and operations, and review any other relevant information, with a view to examining the overall compliance of the U.S. Antarctic Program with the legislation and the protocol.

The inspection team will prepare a report which documents its findings, specifies any examples of failures of compliance, and makes recommendations. The report, along with any comments by the NSF Director on it, will be made public.

Study of Antarctic tourism:

The legislation would provide that the Department of State will coordinate an interagency study to determine whether additional measures should be taken with respect to tourism in Antarctica. The legislation would provide that the study would be completed within 24 months of the date of enactment of the legislation.

Mr. Chairman, in conclusion, the draft administration legislation which is now before you seeks to build upon and synthesize ideas that are contained in S. 1427, as well as draft bills that have been introduced in the House. We believe that the administration's proposal represent a balanced and innovative basis for United States implementation of the protocol. The consensus achieved by the agencies certainly represents the product of long and concerted effort. We are committed to redoubling that effort to complete work on the remaining section of the legislation as rapidly as possible. We look forward to working with you and your colleagues on the house side to enact implementing legislation which will set the standard for all parties to this important new treaty.

A BILL

To implement the Protocol on Environmental Protection to the Antarctic Treaty, to enact a prohibition against Antarctic mineral resource activities, and for other purposes.

SECTION 1.—SHORT TITLE

This Act may be cited as the "Antarctic Environmental Protection Act of 1993."

SECTION 2.—FINDINGS, PURPOSE, AND POLICY

(a) FINDINGS.—The Congress finds that—

(1) the Antarctic Treaty and the Protocol on environmental Protection to the Antarctic Treaty have established a firm foundation for the comprehensive protection of the Antarctic environment, the continuation of international cooperation, and the freedom of scientific investigation in Antarctica;

(2) the Protocol establishes international mechanisms and creates legal obligations necessary for the maintenance of Antarctica as a natural reserve, devoted to peace and science;

(3) the Protocol serves important United States environmental and resource management interests, while at the same time preserving the freedom of scientific investigation in Antarctica;

(4) the Protocol represents an important contribution to the United States' long-term legal and political objectives of maintenance of Antarctica as an area of peaceful international cooperation;

(5) the Protocol institutes environmental impact assessment procedures applicable to United States activities in Antarctica which are consistent with those of the National Environmental Policy Act of 1969;

(6) the prohibition of Antarctic mineral resource activity will contribute to protection of the Antarctic environment and dependent and associated ecosystems by avoiding potential environmental degradation which could result from mineral resource activities;

(7) the Protocol, including the principles contained in Article 3, which is legally binding on the United States, provides a basis for granting residual regulatory authority to address situations not specifically addressed by the provisions of the Protocol; and

(8) Antarctica is a natural reserve, devoted to peace and science.

(b) PURPOSE.—The purpose of this Act is to provide legislative authority to implement, with respect to the United States, the Protocol on Environmental Protection to the Antarctic Treaty.

(c) POLICY.—

(1) It is the national policy of the United States that the protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

(2) It is the national policy of the United States that activities in Antarctica are to be. planned and conducted so as to limit adverse impacts on the Antarctic environment and dependent and associated ecosystems and avoid—

(A) adverse effects on climate or weather patterns;

(B) significant adverse effects on air or water quality;

(C) significant changes in the atmospheric, terrestrial (including aquatic), glacial, or marine environments;

(D) detrimental changes in the distribution, abundance or productivity of species or populations of species of fauna and flora;

(E) further jeopardy to endangered or threatened species or populations of such species; or

(F) degradation of, or substantial risk to, areas of biological, scientific, historic, aesthetic, or wilderness significance.

(3) It is the national policy of the United States that activities in Antarctica are to be planned and conducted on the basis of information sufficient to allow prior assessments of, and informed judgments about, their possible impacts on the Antarctic environment and dependent and associated ecosystems and on the value of Antarctica for the conduct of scientific research, taking full account of—

(A) the scope of the activity, including its area, duration, and intensity;

(B) the cumulative impacts of the activity, both by itself and in combination with other activities in the Antarctic Treaty area;

(C) whether the activity will detrimentally affect any other activity in the Antarctic Treaty area;

(D) whether technology and procedures are available to provide for environmentally safe operations;

(E) whether there exists the capacity to monitor key environmental parameters and ecosystem components so as to identify and provide early warning of any adverse effects of the activity and to provide for such modification of operating procedures as may be necessary in the light of the re-

sults of monitoring or increased knowledge of the Antarctic environment and dependent and associated ecosystems; and

(F) whether there exists the capacity to respond promptly and effectively to accidents, particularly those with potential environmental effects.

(4) It is the national policy of the United States that regular and effective monitoring take place to allow assessment of the impacts of ongoing activities, including the verification of predicted impacts.

(5) It is the national policy of the United States that regular and effective monitoring take place to facilitate early detection of the possible unforeseen effects of activities carried out both within and outside the Antarctic Treaty area on the Antarctic environment and dependent and associated ecosystems.

(6) It is the national policy of the United States that activities in Antarctica be planned and conducted so as to accord priority to scientific research and to preserve the value of Antarctica as an area for the conduct of such research, including research essential to understanding the global environment.

(7) It is the national policy of the United States that activities in Antarctica subject to U.S. jurisdiction take place in a manner consistent with the Protocol, and be modified, suspended or canceled if they result in or threaten to result in impacts upon the Antarctic environment or dependent or associated ecosystems inconsistent with the Protocol.

SECTION 3.—DEFINITIONS

For purposes of this Act—

(1) The term "Administrator" means the Administrator of the Environmental Protection Agency or an officer or employee of the Environmental Protection Agency designated by the Administrator.

(2) The term "Antarctica" means the area south of 60 degrees south latitude, except that with respect to Antarctic mineral resource activity, the term means the area south of the Antarctic Convergence as defined in section 303 of the Antarctic Marine Living Resources Convention Act of 1984 (16 USC 2432(1)).

(3) The term "Antarctic mineral resource"—

(A) means any nonliving natural nonrenewable resource (or part or product thereof) found in or recovered from Antarctica;

(B) includes fossil fuels and minerals, whether metallic or nonmetallic; and

(C) does not include ice, water, snow, or any mineral resource removed before the date of enactment of this Act.

(4) The term "Antarctic mineral resource activity" means collecting, removing or transporting, or prospecting for, or exploration or development of, an Antarctic mineral resource, except that the term does not include those activities that are undertaken in the course of and that are directly related to—

(A) scientific research;

(B) construction, operation and maintenance of research stations, field camps, or other such facilities; or

(C) providing, with the advance written consent of the recipient institution1 an Antarctic mineral resource specimen to a museum or other institution with a similar public function.

(5) The term "Antarctic specially protected area" means an area identified as such under section 6.

(6) The term "Committee for Environmental Protection" means the Committee for Environmental Protection established under Article 11 of the Protocol.

(7) The term "development"—

(A) means any activity, including logistic support, which takes place following exploration, the purpose of which is the exploitation of specific Antarctic mineral resource deposits; and

(B) includes processing, storage, and transport activities.

(8) The term "Director" means the Director of the National Science Foundation or an officer or employee of the Foundation designated by the Director.

(9) The term "exploration"—

(A) means any activity, including logistic support, the purpose of which is the identification or evaluation of specific Antarctic mineral resource deposits for possible development; and

(B) includes exploratory drilling, dredging, and other surface or subsurface excavations undertaken to determine the nature and size of mineral resource deposits and the feasibility of their development.

(10) The term "harmful interference' means—

(A) flying or landing helicopters or other aircraft in a manner that disturbs concentrations of birds or seals;

(B) using vehicles or vessels, including hovercraft and small boats, in a manner that disturbs concentrations of birds or seals;

(C) using explosives or firearms in a manner that disturbs concentrations of birds or seals;

(D) willfully disturbing breeding or molting birds or concentrations of birds or seals by persons on foot;

(E) significantly damaging concentrations of native terrestrial plants by landing aircraft, driving vehicles, walking on them, or by other means; and

(F) any activity that results in significant adverse modification of the habitat of any species or population of native mammal, native bird, native plant or native invertebrate.

(11) The term "historic site or monument" means any site or monument identified as a historic site or monument by the Director under section 6.

(12) The term "impact" means impact on the Antarctic environment or on dependent or associated ecosystems.

(13) The term "implementing agency" means the Director, the Secretary, the Administrator, the Secretary of the Department in which the Coast Guard is operating, or the Secretary of State, as regulatory responsibilities are vested under this Act.

(14) The term "import" means to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States, including the 12-mile territorial sea of the United States, whether or not such act constitutes an importation within the meaning of the customs laws of the United States.

(15) The term "native bird" means any member, at any stage of its life cycle (including eggs), of any species of the class Aves which is indigenous to Antarctica or occurs there seasonally through natural migrations, designated by the Director as a native species under section 6, and includes any part of such member.

(16) The term "native invertebrate" means any terrestrial or freshwater invertebrate, at any stage of its life cycle, which is indigenous to Antarctica, designated by the Director as such under section 6, and includes any part of such invertebrate.

(17) The term "native mammal" means any member, at any stage of its life cycle, of any species of the class Mammalia, which is indigenous to Antarctica or occurs there seasonally through natural migrations, designated by the Director as a native species under section 6, and includes any part of such member.

(18) The term "native plant" means any terrestrial or freshwater vegetation, including bryophytes, lichens, fungi and algae, at any stage of its life cycle (including seeds and other propagules), which is indigenous to Antarctica, designated as such by the Director under section 6, and includes any part of such vegetation.

(19) The term "non-native species" means any species of animal or plant which is not indigenous to Antarctica.

(20) The term "person" means an individual, partnership, corporation, trust, association, or other entity subject to the jurisdiction of the United States and any department, agency, or other instrumentality of the Federal Government or of any State or local government, and any officer, employee, or agent of any such instrumentality.

(21) The term "prohibited product" means any substance which is designated as such under section 6.

(22) The term "prohibited waste" means any substance which is designated as such under section 6.

(23) The term "prospecting" means any activity, including logistic support, the purpose of which is the identification of Antarctic mineral resource potential for possible exploration and development.

(24) The term "Protocol" means the Protocol on Environmental Protection to the Antarctic Treaty, signed October 4, 1991, in Madrid, and all annexes thereto, and includes any future amendments thereto which have entered into force.

(25) The term "Secretary" means the Secretary of Commerce, or an officer or employee of the Department of Commerce designated by the Secretary.

(26) The term "specially protected species" means any native species designated as a specially protected species by the Director under section 6.

(27) The term "take" or "taking" means to kill, injure, capture, handle, or molest, a native mammal or bird, or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected.

(28) The terms "Treaty" and "Antarctic Treaty" mean the Antarctic Treaty signed in Washington, D.C. on December 1, 1959.

(29) The term "United States" means the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, any other commonwealth, territory or possession of the United States, and the Trust Territory of the Pacific Islands.

(30) The term "vessel subject to the jurisdiction of the United States" includes any "vessel of the United States" and any "vessel subject to the jurisdiction of the United States" as those terms are defined in section 303 of the Antarctic Marine Living Resources Convention Act of 1984 (16 USC 2432).

SECTION 4.—PROHIBITED ACTS

(a) IN GENERAL.—It is unlawful for any person—

(1) to engage in, provide assistance (including logistic support) to, or knowingly finance any Antarctic mineral resource activity;

(2) to receive, acquire, transport, offer for sale, sell, purchase, import, export, or have custody, control or possession of any Antarctic mineral resource which that person knows, or in the exercise of due care should have known, was recovered or otherwise possessed as a result of Antarctic mineral resource activity, without regard to the citizenship of the entity that engaged in, or the vessel used in engaging in, the Antarctic mineral resource activity;

(3) to introduce any prohibited product onto land or ice shelves or into water in Antarctica;

(4) to dispose of any waste onto ice-free land areas or into fresh water systems in Antarctica;

(5) to dispose of any prohibited waste in Antarctica;

(6) to engage in open burning of waste in Antarctica after March 1, 1994;

(7) to transport passengers to, from or within Antarctica by any vessel not required to comply with the Act to Prevent Pollution from Ships (33 USC 1901 et seq.), unless the person has an agreement with the vessel owner or operator under which the owner or operator is required to comply with Annex IV to the Protocol;

(8) who organizes, sponsors, operates, or promotes a non-governmental expedition to Antarctica, and who does business in the United States, to fail to notify all members of the expedition of the environmental protection obligations of this Act, and of actions which members must take, or not take, in order to comply with those obligations;

(9) to damage, remove, or destroy a historic site or monument;

(10) to refuse permission to any authorized officer or employee of the United States to board a vessel, vehicle, or aircraft of the United States, or subject to the jurisdiction of the United States, for the purpose of conducting any search or inspection in connection with the enforcement of this Act or any regulation promulgated or permit issued under this Act;

(11) to forcibly assault, resist, oppose, impede, intimidate, or interfere with any authorized officer or employee of the United States in the conduct of any search or inspection described in paragraph (10) of this subsection;

(12) to resist a lawful arrest or detention for any act prohibited by this section;

(13) to interfere with, delay, or prevent, by any means, the apprehension, arrest, or detention of another person, knowing that such other person has committed any act prohibited by this section;

(14) to violate any regulation promulgated under this Act, or any term or condition of any permit issued to that person under this Act; or

(15) to attempt to commit or cause to be committed any act prohibited by this section.

(b) It is unlawful for any person, unless authorized by a permit issued under this Act—

(1) to dispose of any waste in Antarctica (except as otherwise authorized under the Act to Prevent Pollution from Ships (33 USC 1901 et seq.)), including—

(A) to dispose of any waste from land into the sea in Antarctica; and

(B) to incinerate any waste on land or ice shelves in Antarctica, or on board vessels at points of embarcation or demarcation, other than through the use at remote field sites of incinerator toilets for human waste;

(2) to introduce into Antarctica any member of a non-native species;

(3) to enter or engage in activities within any Antarctic specially protected area;

(4) to engage in any taking or harmful interference in Antarctica; or

(5) to receive, acquire, transport, offer for sale, sell, purchase, import, export, or have custody, control or possession of, any native bird, native mammal, or native plant which the person knows, or in the exercise of due care should have known, was taken in violation of this Act.

(c) EXCEPTION FOR EMERGENCIES.—No act described in subsections (a)(4), (a)(5), (a)(6), (a)(7), (a)(9), (a)(14), (a)(15) or subsection (b) shall be unlawful if the person committing the act reasonably believed that he or she did so under emergency circumstances involving the safety of human life or of ships, aircraft, or equipment or facilities of high value, or the protection of the environment.

SECTION 5.—PERMITS

(a) IN GENERAL.—The Director may, in accordance with this section, issue a permit which authorizes the conduct within Antarctica of an act described in section 4(b).

(b) APPLICATIONS FOR PERMITS.—

(1) Applications for permits under this section shall be made in such manner and form, and shall contain such information, as the Director shall by regulation prescribe, and shall be signed by the persons responsible for the activities undertaken under the permit.

(2) The Director shall publish notice in the Federal Register of each application which is made for a permit under this section. The notice shall invite the submission by interested parties, within 30 days (or such other reasonable period greater than 30 days as the Director may determine) after the publication of the notice, of written data, comments, or views with respect to the application. Such application, and any data, comments or views received, shall be made available to the public.

(c) COOPERATION WITH OTHER AGENCIES ON CERTAIN PERMITS.—

(1)(A) If the Director receives an application for a permit under this section requesting authority to undertake any action with respect to—

(i) any native mammal which is a marine mammal within the meaning of section 3(5) of the Marine Mammal Protection Act of 1972 (16 USC 1362(5));

(ii) any native mammal, native bird, native plant, or native invertebrate which is an endangered species or threatened species under the Endangered Species Act of 1973 (16 USC 1531 et seq.);

(iii) any native bird which is protected under the Migratory Bird Treaty Act (16 USC 701 et seq.);

the Director shall submit a copy of the application to the Secretary or to the Secretary of the Interior, as appropriate (hereinafter in this subsection referred to as the "appropriate Secretary").

(B) After receiving a copy of any application from the Director under subparagraph (A) of this paragraph the appropriate Secretary shall promptly determine, and notify the Director, whether or not any action proposed in the application also requires a permit or other authorization under any law administered by the appropriate Secretary.

(C) If the appropriate Secretary notifies the Director that any action proposed in the application requires a permit or other authorization under any law administered by the appropriate Secretary, the Director may not issue a permit under this section with respect to such action unless such other required permit or authorization is issued by the appropriate Secretary and a copy thereof is submitted to the Director. The issuance of any permit or other authorization by the appropriate Secretary for the carrying out of any action with respect to any native mammal, native bird, native invertebrate, or native plant shall not be deemed to entitle the applicant concerned to the issuance by the Director of a permit under this section.

(2)(A) If the Director receives an application for a permit under this section requesting authority to undertake an action described in section 4(b)(1), the Director shall submit a copy of the application to the Administrator, and the Director and Administrator shall promptly consult on the application.

(B) The Director shall not issue, or deny the issuance of, a permit under this section with respect to an action described in section 4(b)(1) before consulting with the Administrator.

(3)(A) If the Director receives an application for a permit under this section requesting authority to undertake an action described in section 4(b) (4) in con-

nection with unavoidable consequences of the construction or operation of scientific support facilities, the Director shall submit a copy of the application to the Secretary, and the Director and the Secretary shall promptly consult on the application.

(B) The Director shall not issue, or deny the issuance of, a permit under this section with respect to such an action without the written concurrence of the Secretary. The Secretary shall inform the Director of such concurrence or denial thereof within 60 days (unless the Secretary and Director agree otherwise) after receiving a copy of the application under paragraph (3)(A) of this subsection.

(4) The Director shall provide the Administrator with a copy of any permit application received for an activity which may be subject to regulations promulgated under section 7(c). The Director shall not issue such a permit without written notice from the Administrator that the applicable requirements of such regulations have been met. The Administrator shall provide the Director with written notice as to whether such requirements have been met within sixty days after receiving a copy of the application.

(d) ISSUANCE OF PERMITS.—As soon as practicable after receiving any application for a permit under this section, or, in the case of any application to which subsection (c) of this section applies, as soon as practicable after the applicable requirements of such subsection are complied with, the Director shall issue, or deny the issuance of, the permit. Within 10 days after the date of the issuance or denial of a permit under this subsection, the Director shall publish notice of the issuance or denial in the Federal Register, including a description of any terms and conditions of the permit.

(e) MODIFICATION, SUSPENSION, AND REVOCATION.—

(1) The Director may modify, suspend, or revoke, in whole or part, any permit issued under this section—

(A) if there is any change in conditions which makes the permit inconsistent with the provisions of this Act or the Protocol;

(B) in any case in which there has been any violation of this Act, including a violation of any regulation promulgated under this Act, or of any term or condition of the permit; or

(C) in order to make the permit consistent with any change made, after the date of issuance of the permit, to any regulation promulgated under section b.

(2) If consultation with the Administrator was required before issuance of the permit, under subsection (c)(2) of this section, then the Director shall not modify the permit before consulting with the Administrator with respect to the modification.

(3) If the concurrence of the Secretary was required before issuance of the permit, under subsection (c)(3) of this section, then the Director shall not modify the permit without receiving the concurrence of the Secretary with respect to the modification.

(4) The Director shall publish notice of the modification, suspension, or revocation of any permit in the Federal Register within 10 days after the date of the decision, including the reasons for the decision.

(5) Any permit modification, suspension, or revocation under paragraph (1)(B) of this subsection shall be undertaken pursuant to the provisions of section 15.

(f) PERMIT FEES.—The Director may establish and charge fees for processing applications for permits under this section. The amount of the fees shall be commensurate with the administrative costs incurred by the Director in processing the application. Fees received will be credited to the appropriation or appropriations designated by the Director.

(g) TERMS AND CONDITIONS OF PERMITS.—

(1) Each permit issued under this section shall specify—

(A) the period during which the permit is valid; and

(B) any other terms and conditions the Director considers necessary and appropriate to ensure that any action authorized under the permit is carried out in a manner consistent with this Act and the regulations promulgated under the Act, including appropriate record-keeping, reporting, and compliance monitoring requirements, and other terms and conditions relating to inspection of documents and records.

(2) A permit which authorizes the disposal of any waste in Antarctica shall—

(A) be issued only if the Director determines, after consultation with the Administrator and based on all relevant information, that such disposal will not pose a substantial hazard to human health or the Antarctic environment;

(B) specify the amount of waste which may be disposed of in Antarctica, how the waste shall be managed prior to disposal, and the conditions for the disposal;

(C) authorize the disposal of sewage or domestic liquid wastes from land directly into the sea only if the Director has taken fully into account the provisions of Article 3 of, and Annex III to, the Protocol, and provided that:

(i) the Director has determined that such disposal occurs, if practicable, where conditions exist for initial dilution and rapid dispersal; and

(ii) if generated in large quantities, such waste shall be treated by maceration or a treatment that the Director has determined provides greater environmental protection than does maceration;

(D) authorize the disposal of the by-product of sewage treatment by the rotary biological contacter process or similar processes from land into the sea, provided that the Director has determined that such disposal does not adversely affect the local environment;

(E) authorize the disposal of waste through incineration only if the Director has determined that the incineration will meet the standards established by regulation under section 6; and

(F) not authorize any disposal of prohibited waste in Antarctica.

All determinations by the Director under this paragraph shall be made in consultation with the Administrator.

(3) A permit which authorizes a taking or a harmful interference within Antarctica—

(A) may be issued only for the purpose of providing—

(i) specimens for scientific study or scientific information;

(ii) specimens for museums, herbaria, zoological or botanical gardens, or other educational or cultural institutions or uses; or

(iii) for consequences of scientific activities, or of the construction and operation of scientific support facilities, which the Director has determined are unavoidable; and

(B) shall require that, as determined by the Director—

(i) no more native mammals, native birds, or native plants are taken than are strictly necessary to meet the purposes set forth in subparagraph (A) of this paragraph;

(ii) only small numbers of native mammals or native birds are killed, and in no case more native mammals or native birds are killed from local populations than can, in combination with other permitted takings, normally be replaced by natural reproduction in the following season; and

(iii) the diversity of species, as well as the habitats essential to their existence, and the balance of the ecological systems existing within Antarctica are maintained.

(C) shall specify—

(i) the number and species of native mammals, native birds, native invertebrates, or native plants to which the permit applies; and

(ii) the manner in which the taking or harmful interference shall be conducted (which manner, as determined by the Director, involves the least degree of pain and suffering practicable), the period of time within which it must be conducted, the area in which it must be conducted, and the person who will take the action.

All determinations made by the Director under this paragraph in connection with permits for which the concurrence of the Secretary under subsection (c)(3) of this section is required shall be made only with the concurrence of the Secretary.

(4) A permit which authorizes a taking within Antarctica of a member of a specially protected species must meet the requirements contained in paragraph (3) of this subsection, and in addition may be issued only if the Director determines that—

(A) there is a compelling scientific purpose for the taking;

(B) the taking will not jeopardize any existing natural ecological system or the survival or recovery of the species or local population; and

(C) the taking uses non-lethal techniques, if appropriate.-18-

All determinations made by the Director under this paragraph in connection with permits for which the concurrence of the 'Secretary under subsection (c)(3) of this section is required shall be made only with the concurrence of the Secretary.

(5) A permit which authorizes the introduction of a member of a non-native species into Antarctica—

(A) may not be issued unless the non-native species is listed in Appendix B to Annex II to the Protocol;

(B) shall specify the number, species, and, if appropriate, age and sex of the animals or plants to which the permit applies;

(C) shall specify the precautions to be taken to prevent escape or contact with native fauna and flora;

(D) shall require that any animals or plants to which the permit applies, and any progeny, shall, prior to expiration of the permit, be removed from Antarctica or disposed of by incineration or equally effective means that eliminates risk to native fauna and flora;

(E) shall not permit the importation of dogs or live poultry or other living birds; and

(F) shall require that precautions be taken to prevent the release into the environment of micro-organisms (e.g., viruses, bacteria, parasites, yeasts and fungi) not present in native fauna and flora.

(6) A permit which authorizes entry into and engaging in activities within an Antarctic specially protected area shall—

(A) if a management plan relating to the area has been approved, be issued only—

(i) to enter and engage in activities within the specially protected area which the Director has determined are in accordance with the requirements of the management plan relating to that area; and

(ii) if accompanied by the relevant sections of the management plan;

(B)if a management plan relating to the area has not been approved, be issued only—

(i) if entry is necessary to accomplish a compelling scientific purpose which the Director has determined cannot be served elsewhere; and

(ii) if the Director has determined that the actions allowed under the permit will not jeopardize the natural ecological system existing in the area; and

(C) specify—

(i) the extent and location of the specially protected area;

(ii) the activities authorized;

(iii) the period of time within which the authorized activities must be conducted, the area in which they must be conducted, and the person who is authorized to conduct them; and

(iv) other conditions imposed by the management plan, if any.

(7) No permit shall be required for the importation of food into Antarctica, except that—

(A) no live animals may be imported for this purpose;

(B) all plants and animal parts shall be kept under carefully controlled conditions and disposed of in accordance with the provisions of this Act; and

(C) before dressed poultry is packaged for shipment to Antarctica, it shall be inspected for evidence of disease, such as Newcastles disease, tuberculosis, and yeast infection.

SECTION 6.—REGULATIONS

(a) IN GENERAL.—The Director, the Secretary, the Administrator, the Secretary of the Department in which the Coast Guard is operating, and the Secretary of State shall promulgate, in accordance with this section, such regulations as are necessary and appropriate to implement the provisions of this Act and the Protocol.

(b) REGULATIONS TO BE PROMULGATED BY THE SECRETARY.—The Secretary shall promulgate such regulations relating to Antarctic mineral resource activity as the Secretary deems are necessary and appropriate to implement the provisions of this Act and the Protocol.

(c) REGULATIONS TO BE PROMULGATED BY THE DIRECTOR.—The Director shall promulgate regulations which—

(1) designate as native species—

(A) each species of the class Aves;

(B) each species of the class Mammalia;

(C) each species of plant; and

(D) each species of invertebrate;

which is indigenous to Antarctica or which occurs there seasonally through natural migrations;

(2) specify those actions which must, and those actions which must not, be taken within Antarctica in order to protect, in accordance with the applicable provisions of the Protocol, members of each native species designated under subsection (c)(1) of this section;

(3) designate as a specially protected species any species of native mammal, native bird, native invertebrate, or native plant which is—

(A) listed in Appendix A to Annex II to the Protocol; or

(B) approved by the United States for special protection under the Protocol;

(4) designate as a non-native species that may be introduced into Antarctica only those species listed in Appendix B to Annex II to the Protocol;

(5) identify each area designated as a Antarctic specially protected area or specially managed area under the Protocol, and implement the provisions of the management plan applicable to such area;

(6) identify each historic site and monument—

(A) listed under Article 8 of Annex V to the Protocol; or

(B) approved by the United States for listing as a historic site or monument;

(7) require that any person who organizes, sponsors, operates, or promotes a non-governmental expedition to Antarctica, and who does business in the United States, to notify all members of the expedition of the environmental protection obligations of this Act, and of actions which members must take, or not take, in order to comply with those obligations; and

(8) set forth the form, content, and manner of filing, if applicable, of all notices, reports, declarations, or other documentation which may be required with respect to the carrying out of any act for which a permit is required under this Act.

(d) RESIDUAL REGULATORY AUTHORITY OF THE DIRECTOR.—In addition to the specific authorities set forth in subsection (c) of this section, the Director may promulgate such regulations relating to the conservation of Antarctic fauna and flora or area protection in Antarctica as the Director deems necessary and appropriate to implement the provisions of the Protocol, including but not limited to regulations which address a situation not covered by the annexes to the Protocol or in which a more rigorous or supplemental requirement is necessary.

(e) REGULATIONS TO BE PROMULGATED BY THE DIRECTOR WITH THE CONCURRENCE OF THE ADMINISTRATOR.—The Director, with the concurrence of the Administrator, shall promulgate regulations which—

(1) designate as prohibited products—

(A) polychlorinated biphenyls;

(B) non-sterile soil;

(C) polystyrene beads or chips or similar forms of packaging;

(D) pesticides (other than those required for scientific, medical or hygiene purposes); and

(E) substances which the Parties to the Protocol or Treaty agree should be banned from use in Antarctica;

(2) designate as prohibited waste—

(A) radioactive materials;

(B) electrical batteries;

(C) liquid and solid fuel;

(D) wastes containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds;

(E) polyvinyl chloride, polyurethane foam, polystyrene foam, rubber and lubricating oils, treated timbers and other products which contain additives that could produce harmful emissions if incinerated;

(F) all other plastic wastes, except low density polyethylene containers (such as bags for storing wastes), provided that the capacity exists to incinerate such containers under paragraph (5) of this subsection, in which case such containers shall be incinerated;

(G) fuel drums and other solid, non-combustible wastes (provided that their removal would not result in greater adverse environmental impact than leaving them in their existing locations);

(H) unless incinerated, autoclaved, or otherwise treated to be made sterile—

(i) residues of carcasses of imported animals;

(ii) laboratory culture of micro-organisms and plant pathogens;

(iii) medical wastes; and

(iv) introduced avian products; and

(I) the solid residue of incineration;

(3) provide that—

(A) prohibited waste shall be removed from Antarctica;

(B) sewage, domestic liquid waste, and other liquid waste (other than prohibited waste) shall, to the maximum extent practicable, be removed from Antarctica;

(C) waste at field camps shall be transported to supporting stations or vessels for disposal in accordance with this Act; and

(D) wastes removed from Antarctica shall be disposed of in accordance with applicable domestic and international law;

(4) provide that sewage, domestic liquid waste, and other liquid waste (other than prohibited waste) to the maximum extent practicable are not disposed of onto sea ice, ice shelves, or the grounded ice-sheet, provided that such wastes which are generated by stations located inland on ice shelves or on the grounded ice-sheet may be disposed of in deep ice pits if such disposal is the only practicable option, as long as such pits are not located on known ice-flow lines which terminate at ice-free land areas or in areas of high ablation;

(5) if the Director determines, in consultation with the Administrator, through sound waste management planning, to allow incineration as a means of waste disposal, provide standards for incineration which—

(A) to the maximum extent practicable, reduce harmful emissions;

(B) take fully into account the provisions of Article 3 of the Protocol;

(C) are based on the criteria contained in sections 129(a)(2), 129(a)(4), and 129(c) of the Clean Air Act (42 USC 7429(a)(2), (a)(4), and (c)), taking into account the unique circumstances of Antarctic logistics, operations, and the Antarctic environment; and

(D) take into account any emission standards and equipment guidelines which may be recommended by the Committee for Environmental Protection and the Scientific Committee on Antarctic Research.

If it has been determined to use incineration as a means of waste disposal, the Director, in consultation with the Administrator, shall review such determination not later than five years after the initial promulgation of any incineration standards, and at five-year intervals thereafter. Such review shall take into account technological advances in waste disposal and removal, new information concerning effects on human health and the environment, and the state of the Antarctic environment;

(6) provide that all wastes to be removed from Antarctica, or disposed of in Antarctica, shall be stored in such a way as to prevent their release into the environment;

(7) provide, with respect to the United States Antarctic Program and any other United States Government program in Antarctica, in accordance with Articles 8, 9 and 10 of Annex III to the Protocol, for—

(A) the establishment of a waste disposal classification system;

(B) the preparation, and annual review and update, of waste management plans, taking into account Article 1(3) of Annex III to the Protocol; and

(C) other waste management activities of such programs; and

(8) provide that past and present waste disposal sites on land and abandoned work sites of Antarctic activities shall be cleaned up by the generator of such wastes and the user of such sites, provided that

(A) such regulations shall not require the removal of any structure designated as a historic site or monument, or the removal of any structure or waste material in circumstances where the removal by any practical option would result in greater adverse environmental impact than leaving the structure or waste material in its existing location; and

(B) such regulations shall take into account considerations of practicality, and of the safety of human life.

(f) RESIDUAL REGULATORY AUTHORITY OF THE DIRECTOR WITH THE CONCURRENCE OF THE ADMINISTRATOR.—In addition to the specific authorities set forth in subsection (e) of this section, the Director, with the concurrence of the Administrator, may—

(1) promulgate such regulations relating to waste disposal and waste management in Antarctica as the Director deems necessary and appropriate to implement the provisions of the Protocol, including but not limited to regulations which address a situation not covered by the annexes to the Protocol or in which a more rigorous or supplemental requirement is necessary; and

(2) designate additional items as prohibited products or prohibited waste under subsection (e)(1) and (e)(2) of this section, when the Director determines

that such designation is necessary and appropriate to protect human health or the Antarctic environment.

(g) REGULATIONS TO BE PROMULGATED BY THE SECRETARY OF STATE.—The Secretary of State shall promulgate such regulations as are necessary and appropriate to implement, with respect to any person, paragraph 5 of Article VII of the Treaty, pertaining to the filing of advance notifications of expeditions to and within Antarctica, including a requirement for such person to describe how he or she plans to comply with any regulations promulgated under subsection (h) of this section.

(h) REGULATIONS WITH RESPECT TO CONTINGENCY PLANNING AND RESPONSE ACTION.—

(1) The Secretary of the Department in which the Coast Guard is operating, in addition to the regulations specified in section 9, shall promulgate, with the concurrence of the Director, such regulations as are necessary and appropriate to implement the provisions of Article 15 of the Protocol with respect to vessels.

(2) The Director shall promulgate such regulations as are necessary and appropriate to implement the provisions of Article 15 of the Protocol with respect to land areas and ice shelves in Antarctica.

(i) RESIDUAL REGULATORY AUTHORITY OF THE SECRETARY OF THE DEPARTMENT IN WHICH THE COAST GUARD IS OPERATING.—In addition to the specific authority set forth in subsection (h) of this section and in section 9, the Secretary of the Department in which the Coast Guard is operating may promulgate such regulations relating to marine pollution in Antarctica as the Secretary of said Department deems necessary and appropriate to implement the provisions of the Protocol, including but not limited to regulations which address a situation not covered by the annexes to the Protocol or in which a more rigorous or supplemental requirement is necessary.

(j) TIME PERIOD FOR REGULATIONS.—The regulations to be promulgated under subsections (c) and (g) of this section shall be promulgated within 24 months after the date of enactment of this Act. The regulations to be promulgated under subsection (e) of this section shall be promulgated within 36 months after the date of enactment of this Act.

SECTION 7.—ENVIRONMENTAL IMPACT ASSESSMENT

(a) FEDERAL ACTIVITIES.—

(1)(A) It is the intent of Congress to implement U.S. obligations under Article 8 of and Annex I to the Protocol by applying the National Environmental Policy Act (42 USC 4321 et seq.) to proposals for federal agency activities in Antarctica, as specified in this section.

(B) The obligations contained in section 102(2)(C) of the National Environmental Policy Act (42 USC 4332(2)(C)) shall apply to proposals for federal agency activities occurring in Antarctica and affecting the quality of the human environment in Antarctica or dependent or associated ecosystems, as specified in this section.

(2)(A) Unless an agency which proposes to conduct a federal activity in Antarctica determines that the activity will have less than a minor or transitory impact, or unless a comprehensive environment evaluation is being prepared in accordance with paragraph (2)(C) of this subsection, the agency shall prepare an initial environmental evaluation, in accordance with Article 2 of Annex I to the Protocol.

(B) If the agency determines, through the preparation of the initial environmental evaluation, that the proposed federal activity is likely to have a minor or transitory impact, the activity may proceed if appropriate procedures are put in place to assess and verify the impact of the activity.

(C) If the agency determines, through the preparation of the initial environmental evaluation or otherwise, that a proposed federal activity is likely to have more than a minor or transitory impact, the agency shall prepare a comprehensive environmental evaluation in accordance with Article 3 of Annex I to the Protocol, and shall make such comprehensive environmental evaluation publicly available for comment.

(3) Any agency decision under this section on whether a proposed federal activity, to which paragraph (2)(C) of this subsection applies, should proceed, and, if so, whether in its original or in a modified form, shall be based on the comprehensive environmental evaluation as well as other considerations which the agency, in the exercise of its discretion, deems relevant.

(4) For the purposes of this section:

(A) the term "federal activity" includes, but is not limited to, activities conducted under a federal agency research program in Antarctica, whether or not conducted by a federal agency; and

(B) activities that may have a "significant" impact, within the meaning of section 102(2)(C) of the National Environmental Policy Act (42 USC 4332(2)(C)), are deemed to fall within the category of activities that are likely to have "more than a minor or transitory impact".

(b) FEDERAL ACTIVITIES CARRIED OUT JOINTLY WITH FOREIGN GOVERNMENTS.—

(1) For the purposes of this subsection, "Antarctic joint activity" means any federal activity in Antarctica which is proposed to be conducted, or which is conducted, jointly or in cooperation with one or more foreign governments, as defined in regulations promulgated by such agencies as the President may designate.

(2) Where the Secretary of State, in cooperation with the lead U.S. agency planning an Antarctic joint activity and with the other government or governments involved, determines that a government other than the United States, which has signed or acceded to the Protocol, is coordinating the implementation of environmental impact assessment procedures for that activity, the requirements of subsection (a) of this section shall not apply in respect of that activity.

(3) Determinations under paragraph (2) of this subsection, and agency actions and decisions in connection with assessments of impacts of Antarctic joint activities, shall not be subject to judicial review.

(c) NONGOVERNMENTAL ACTIVITIES.—

(1) The Administrator shall, within 24 months after the date of enactment of this Act, promulgate regulations to provide for—

(A) the environmental impact assessment of nongovernmental activities, including tourism, for which the United States is required to give advance notice under paragraph 5 of Article VII of the Treaty; and

(B) coordination of the review of information regarding environmental impact assessment received from other Parties under the Protocol.

(2) Such regulations shall be consistent with the provisions of Annex 1 to the Protocol.

(d) DECISION TO PROCEED.—

(1) No decision shall be taken to proceed with an activity for which a comprehensive environmental evaluation is prepared under this section unless there has been an opportunity for consideration of the draft comprehensive environmental evaluation at an Antarctic Treaty Consultative Meeting, provided that no decision to proceed with a proposed activity shall be delayed through the operation of this subsection for more than 15 months from the date of circulation of the draft comprehensive environmental evaluation.

(2) The Secretary of State shall circulate the final comprehensive environmental evaluation, in accordance with Article 3(6) of Annex I to the Protocol, at least GO days before the commencement of the activity in Antarctica.

(e) CASES OF EMERGENCY.—The requirements set out in this section, and in regulations promulgated under it, shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft, or equipment and facilities of high value, or the protection of the environment, which require an activity to be undertaken without fulfilling these requirements.

(f) JUDICIAL REVIEW.—Agency compliance with subsection (a) of this section shall be reviewable under sections 701 et seq. of Title 5, subject to the provisions of subsection (b)(3) of this section.

(g) REPORTING.—The Secretary of State and the Administrator shall report annually to the Congress regarding implementation of this section. Their reports shall include information provided under Article 6 of Annex I to the Protocol, copies of all comprehensive environmental evaluations circulated and all public comments received, as well as descriptions of any Antarctic joint activities and the environmental impact documentation associated therewith.

(h) EXCLUSIVE MECHANISM.—Notwithstanding any other provision of law, the requirements of the National Environmental Policy Act as specified in this section shall constitute the sole and exclusive statutory obligations of the federal agencies with regard to assessing the environmental impacts of proposed federal activities occurring in Antarctica.

(i) DECISIONS ON PERMIT APPLICATIONS.—The provisions of this section requiring environmental impact assessments (including initial environmental evaluations and comprehensive environmental evaluations) shall not apply to permitting decisions under section 5.

SECTION 8.—MONITORING

The Director, in consultation with the Administrator, shall promulgate such regulations as are necessary and appropriate, in accordance with Article 8 of and Annex

I to the Protocol, to provide for procedures to assess and verify the impact over time of any activity that proceeds following the completion of a comprehensive environmental evaluation and, as appropriate, the impact over time of activities that proceed after a determination that they are likely to have no more than a minor or transitory impact.

SECTION 9.—MARINE POLLUTION—AMENDMENTS TO THE ACT TO PREVENT POLLUTION FROM SHIPS, 33 USC 1901 ET SEQ.

(a) REFERENCES.—All references in this section to amendment or repeal mean amendment or repeal of a section, subsection or provision or the Act to Prevent Pollution from Ships (33 USC 1901 et seq.)

(b) DEFINITIONS.—Subsection (a) of section 1901 of Title 33 is amended—

(1) in paragraph (8) by striking "and" after the semicolon;

(2) in paragraph (9) by striking the period and inserting "; and"; and

(3) by adding at the end the following new paragraphs:

"(10) 'Antarctica' means the area south of 60 degrees south latitude; and

"(11) 'Antarctic Protocol' means the Protocol on Environmental Protection to the Antarctic Treaty, signed October 4, 1991, in Madrid, and all annexes thereto, and includes any future amendments thereto which have entered into force."

(c) APPLICATION OF ANNEX IV OF THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY.—Section 1901 of Title 33 is further amended by adding a new subsection (c) as follows:

"(c) For the purposes of this chapter, the requirements of Annex IV of the Antarctic Protocol shall apply in Antarctica to all vessels over which the United States has jurisdiction, except for vessels listed in 33 U.S.C. 1902(b)."

(d) ADMINISTRATION.—Subsection (a) of section 1903 of Title 33 is amended by inserting in the first sentence ", Annex IV to the Antarctic Protocol" after "the MARPOL Protocol".

(e) REGULATIONS.—Subsection (b)(1) of section 1903 of Title 33 is amended by inserting ", Annex IV to the Antarctic Protocol" after "the MARPOL Protocol".

(f) VIOLATIONS.—

(1) Subsection (a) of section 1907 of Title 33 is amended by inserting in the first sentence ", Annex IV to the Antarctic Protocol" after "the MARPOL Protocol".

(2) Subsection (b) of section 1907 of Title 33 is amended by striking the fourth and fifth sentences and replacing them with the following:

"With respect to the MARPOL Protocol, upon completion of the investigation, the Secretary shall take the action required by the MARPOL Protocol and whatever further actions he or she considers appropriate under the circumstances. If the initial evidence was provided by a party to the MARPOL Protocol, the Secretary, acting through the Secretary of State, shall inform that party of the action taken or proposed. With respect to Annex IV to the Antarctic Protocol, upon completion of the investigation, the Secretary shall take any actions required by the Antarctic Protocol and whatever further actions he or she considers appropriate under the circumstances."

(g) PENALTIES.—Section 1908 of Title 33 is amended—

(1) in subsection (a) by inserting "Annex IV to the Antarctic Protocol," after "the MARPOL Protocol,";

(2) in subsection (b) by inserting "Annex IV to the Antarctic Protocol," after "the MARPOL Protocol," in both paragraphs (1) and (2);

(3) in subsection (d) by inserting "Annex IV to the Antarctic Protocol," after "the MARPOL Protocol,".

SECTION 10.—REPRESENTATIVE TO THE COMMITTEE FOR ENVIRONMENTAL PROTECTION

(a) The Secretary of State, with the concurrence of the Administrator, the Director and the Secretary, shall designate an officer or employee of the United States to be the United States representative to the Committee for Environmental Protection.

(b) The officer or employee designated shall have the technical qualifications necessary to serve in this capacity.

(c) The United States representative shall receive no additional compensation by reason of service as such representative.

SECTION 11.—OVERSIGHT

(a) REPORT AND ON-SITE INSPECTIONS.—

(1) The Secretary of State, in conjunction with the Administrator and the Secretary, shall, at appropriate intervals of between two and five years, conduct an inspection of the United States Antarctic Program, including on-site inspections of stations, field camps, and operations, and review of any other relevant information, including information received from the Director, with a view to examining the overall compliance of the United States Antarctic Program with this Act and the Protocol.

(2) The inspection of the United States Antarctic Program shall be conducted by a team designated by the Secretary of State, the Administrator, and the Secretary. The team shall comprise no more members than are necessary and appropriate to carry out its mandate, and shall include technically qualified experts, both governmental and non-governmental.

(3) The National Science Foundation shall provide all transportation and logistical support necessary to allow the team to conduct the on-site inspections in Antarctica, and shall cooperate to the fullest extent possible in meeting requests for documents, other information, and assistance necessary for the inspection team to carry out its work. The costs of transportation to and from Antarctica shall be borne by the Department of State, the Environmental Protection Agency, and the Department of Commerce.

(4) The inspection team shall prepare a draft report which documents its findings. on the compliance of the United States Antarctic Program with the provisions of this Act and the Protocol, shall specify any examples of failures of compliance, and shall make recommendations. The inspection team shall provide the draft report to the Director for review and comment for a period not to exceed 120 days.

(b) PUBLICATION.—The final report of the inspection team, including any comments by the Director, shall promptly be made public. The Director shall publish notice of the report and the response in the Federal Register.

SECTION 12.—STUDY OF ANTARCTIC TOURISM

The Department of State shall coordinate an interagency study of tourism in Antarctica (including recommendations where appropriate) to determine whether or not additional measures should be taken with respect to Antarctic tourist activities. This study shall be completed within 24 months after the date of enactment of this Act.

SECTION 13.—RULE MAKING AND PETITION FOR REGULATIONS

(a) RULE MAKING.—Promulgation of regulations under this Act shall be in accordance with section 553 of Title 5.

(b) PETITION FOR REGULATIONS.—Any person may petition the implementing agency for the promulgation, amendment, or repeal of any regulation under this Act within its authority. Within 180 days of receipt of such a petition, the implementing agency shall grant or deny the petition. If the petition is denied, the implementing agency shall provide notice of such denial and the reasons therefor. If the petition is granted, the final regulations shall be promulgated within twenty-four months of the granting of the petition.

SECTION 14.—JUDICIAL REVIEW AND CITIZEN SUITS

SECTION 15.—ADMINISTRATIVE ENFORCEMENT

(a) ADMINISTRATIVE COMPLIANCE ORDERS.—

(1) Whenever, on the basis of any information, the implementing agency determines that any person has violated or is in violation of any requirement of this Act, or any permit issued or regulation promulgated under this Act, such agency may, after notice and opportunity for a hearing in accordance with subsection (c) of this section, issue an order requiring compliance immediately or within a specified time period, or both.

(2) Upon the failure of any person against whom a compliance order is issued to take corrective action within the time specified in the order, and after notice and an opportunity for a hearing in accordance with subsection (c) of this section, the implementing agency may request the Attorney General to institute a civil action in either the U.S. District Court for the District of Columbia or for any district in which such person is found, resides or transacts business to enforce such order.

(b) ASSESSMENT OF PENALTIES.—

(1) Any person who is found by the implementing agency, after notice and opportunity for a hearing in accordance with subsection (c) of this section, to have

committed any act prohibited by section 4 shall be liable to the United States for a civil penalty. The amount of the civil penalty shall not exceed 50,000 dollars for each violation. Each day of a continuing violation shall constitute a separate offense. The amount of such civil penalty shall be assessed by written notice. In determining the amount of such penalty, the implementing agency shall take into account the nature, circumstances, extent, and gravity of the prohibited acts committed, and, with respect to the violator, the degree of culpability, any history of prior offenses, any economic benefit derived from the violation, and such other matters as justice may require, to the extent such information is reasonably available to the implementing agency.

(2) The implementing agency may compromise, modify, or remit, with or without conditions, any civil penalty which is subject to imposition or which has been imposed under this section.

(c) HEARINGS.—Hearings for administrative actions under this section shall be conducted in accordance with section 554 of Title 5. For the purposes of conducting any such hearing, the implementing agency may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may administer oaths. Witnesses summoned shall be paid the same fees and mileage that are paid to witnesses in the courts of the United States. In case of contempt or refusal to obey a subpoena served upon any person under this subsection, the district court of the United States for any district in which such person is found, resides, or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the implementing agency or to appear and produce documents before the implementing agency, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(d) REVIEW OF ADMINISTRATIVE ACTIONS.—Any person against whom an administrative action has been taken under this section may obtain review thereof in the U.S. District Court for the District of Columbia by filing a complaint in such court within 30 days from the date of such order and by simultaneously sending a copy of such complaint, by certified mail to the implementing agency, the Attorney General and the appropriate United States Attorney. The implementing agency shall promptly file in such court a certified copy of the record upon which the violation was found or such penalty imposed, as provided in section 2112 of Title 28. Such court shall not set aside or remand such order unless there is not substantial evidence in the record, taken as a whole, to support the finding of a violation or unless the implementing agency's assessment of the penalty constitutes an abuse of discretion. In any such proceeding, the United States may seek to recover the civil penalty assessed under this section.

(e) ACTION UPON FAILURE TO PAY ASSESSMENT.—If any person fails to pay an assessment of a civil penalty after it has become a final and unappealable order, or after the court has entered final judgment in favor of the Implementing agency, the implementing agency shall request the Attorney General of the United States to bring a civil action to recover the amount assessed in any appropriate district court of the United States. In such action, the validity and appropriateness of the final order imposing the civil penalty shall not be subject to review.

(f) IN REM JURISDICTION.—Any vessel, vehicle or aircraft (including its gear, furniture, appurtenances, stores, and cargo) used in the commission of an act prohibited by section 4 shall be liable in rem for any civil penalty assessed for such violation under this section and may be proceeded against in any district court of the United States having jurisdiction thereof. Such penalty shall constitute a maritime lien on such vessel which may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

SECTION 16.—CIVIL JUDICIAL ENFORCEMENT

(a) CIVIL JUDICIAL ENFORCEMENT.—Whenever, on the basis of any information, the implementing agency determines that a person has violated or is in violation of any requirement of this Act or any permit issued or regulation promulgated under this Act, such agency may request the Attorney General to commence a civil action in either the U.S. District Court for the District of Columbia, or for any district in which such person is found, resides, or transacts business, for appropriate relief, including a temporary or permanent injunction or to assess and recover a civil penalty not to exceed 50,000 dollars per day for each past or ongoing violation, or both. Each day of a continuing violation shall constitute a separate offense.

(b) FACTORS CONSIDERED IN DETERMINING AMOUNT.—In determining the amount of such penalty, the court shall take into account the nature, circumstances, extent,

and gravity of the prohibited acts committed, and, with respect to the violator, the degree of culpability, any history of prior offenses, any economic benefit derived from the violation, and such other matters as justice may require.

(c) IMMINENT HAZARD.—Notwithstanding any other provision of this Act, upon receipt of evidence that a person's past or present activities may present an imminent and substantial endangerment to human health or the environment in Antarctica, the Director, in consultation with the Administrator, may request the Attorney General to bring suit on behalf of the United States in either the U.S. District Court for the District of Columbia, or for any district in which such person is found, resides, or transacts business, against any person who has contributed to or who is contributing to such activities to restrain such person from such activities, to order such person to take other action as may be necessary, or both. The Director, in consultation with the Administrator, may also take other action under this section, including but not limited to issuing such orders as may be necessary to protect human health or the environment in Antarctica, and undertaking corrective action and recovering costs of such action.

SECTION 17.—CRIMINAL OFFENSES

(a) OFFENSES.—Any person who knowingly commits any act prohibited by section 4 shall, upon conviction, be punished by a fine of not more than $50,000 per day of the violation, or by imprisonment for not more than five years, or by both; except that if in the commission of any such offense the person uses a dangerous weapon, engages in conduct that causes bodily injury to any officer or employee of the United States carrying out the powers specified in section 19(b)(1), or places any such officer or employee in fear of imminent bodily injury, the maximum fine shall be as provided in Title 18 and the maximum Imprisonment shall be ten years. Each day of a continuing violation shall constitute a separate offense. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both twine and imprisonment.

(b) FEDERAL JURISDICTION.—There is federal jurisdiction over any offense described in subsection (a) of this section.

(c) OTHER CRIMINAL OFFENSES.—Nothing in this Act shall be construed to limit the jurisdiction of the United States over other criminal offenses which may occur in Antarctica.

SECTION 18.—CIVIL FORFEITURE

(a) IN GENERAL.—Any vessel, vehicle or aircraft (including its gear, furniture, appurtenances, stores and cargo), and any guns, traps, and other equipment used, and any animal, plant, Antarctic mineral resource (or the fair market value thereof), or other property recovered, taken, or possessed, in any manner, including any proceeds thereof, in connection with or as a result of the commission of any act prohibited by section 4 shall be subject to forfeiture to the United States. All or part of such vessel, vehicle or aircratt may, and all of any such animal, plant, or Antarctic mineral resource (or fair market value thereof), shall be forfeited to the United States pursuant to a civil proceeding under this section.

(b) JURISDICTION OF DISTRICT COURTS.—Any district court of the United States shall have jurisdiction, upon application by the Attorney General on behalf of the United States, to order any forfeiture authorized under subsection (a) of this section and any action provided for under subsection (d) of this section.

(c) JUDGMENT.—If a judgment is entered for the United States in a civil forfeiture proceeding under this section, the Attorney General may seize any property or other interest declared forfeited to the United States, which has not previously been seized under this Act or for which security has not previously been obtained under subsection (d) of this section. The provisions of the customs laws relating to—

(1) the seizure, forfeiture, and condemnation of property for violation of the customs law;

(2) the disposition of such property or the proceeds from the sale thereof; and

(3) the remission or mitigation of any such forfeiture;

shall apply to seizures and forfeitures incurred, or alleged to have been incurred, under the provisions of this Act, unless such customs law provisions are inconsistent with the purposes, policy, and provisions of this Act, except that all powers, rights, and duties conferred or imposed by the customs laws upon any officer or employee of the Customs Services shall, for the purposes of this Act, be exercised or performed by the implementing agency.

(d) PROCEDURE.—

(1) Any officer authorized to serve any process in rem which is issued by a court under this Act shall—

(A) stay the execution of such process; or

(B) discharge any property seized pursuant to such process;

upon the receipt of a satisfactory bond or other security from any person claiming such property. Such bond or other security shall be conditioned upon such person (i) delivering such property to the appropriate court upon order thereof, without any impairment of its value, or (ii) paying the monetary value of such property pursuant to an order of such court. Judgment shall be recoverable on such bond or other security against both the principal and any sureties in the event that any condition thereof is breached, as determined by such court. Nothing in this paragraph flay be construed to require the implementing agency, except in such agency's discretion or pursuant to the order of a court, to release on bond any seized property or the proceeds from the sale thereof.

(2) Except as provided in subsection (e) of this section, any property seized under this Act may be sold, subject to regulations promulgated by the implementing agency, for not less than the fair market value thereof. The proceeds of any such sale shall be deposited with such court pending the disposition of the matter involved.

(e) DISPOSAL.—Notwithstanding any other provision of law, upon the forfeiture to the United States of any property or item described in subsection (a) of this section, or upon the abandonment or waiver of any claim to deny such property or item, it shall be disposed of by the implementing agency in such manner (including, but not limited to loan, sale, gift or destruction), consistent with the purposes of the Act, as may be prescribed by regulation; except that no native mammal, native bird, or native plant may be disposed of by sale to the public.

SECTION 19.—POWERS OF AUTHORIZED ENFORCEMENT OFFICERS AND EMPLOYEES

(a) GENERAL RESPONSIBILITY.—The provisions of the Act and of any regulation promulgated or permit issued under this Act shall be enforced by the authorized officers or employees designated by the Director, the Secretary, the Administrator, the Secretary of the Treasury, the Secretary of the department in which the Coast Guard is operating or the Secretary of State. Each such agency may by agreement, on a reimbursable basis or otherwise, utilize the personnel, services, equipment (including aircraft and vessels) and facilities or any other department or agency of the United States in the performance of such duties.

(b) SPECIFIC POWERS.—Any officer or employee of the United States who is authorized (by an enforcing agency, or the head of any department or agency of the United States which has entered into an agreement with an enforcing agency under subsection (a) of this section) to enforce the provisions of this Act and of any regulation promulgated or hermit issued under this Act may—

(1) secure, execute, and serve any order, warrant, subpoena, or other process, which is issued under the authority of the United States or by any court of competent jurisdiction;

(2) with or without a warrant or other process—

(A) search any person, place, vessel, vehicle, or aircraft subject to the provisions of this Act where there are reasonable grounds to believe that evidence of a violation of this Act will be found;

(B) board, and search or inspect, any vessel, vehicle or aircraft subject to the provisions of this Act;

(C) seize any evidence relating to a violation of this Act;

(D) seize any animal, plant, Antarctic mineral resource, prohibited product or prohibited waste, wherever such item may be found, which is or has been recovered, taken or possessed in violation of this Act;

(E) seize any vessel vehicle or aircraft subject to the provisions of this Act (including its gear, furniture, appurtenances, stores and cargo), or any guns, traps or other equipment used in, or that reasonably appears to have been used in, a violation of this Act;

(F) detain for inspection and inspect any package, crate, or other container, including its contents, and all accompanying documents, upon importation into or exportation from, the United States; and

(G) arrest any person, if he or she has reasonable cause to believe that such person has committed an act prohibited by section 4;

(2) offer and pay a reward to any person who furnishes information which leads to an arrest, conviction, civil penalty assessment, permit sanction, compliance order, injunction, or forfeiture of property for any violation of any provision of this Act;

(3) make inquiries, and administer to, or takefrom, any person an oath, affirmation or affidavit, concerning any matter which is related to the enforcement of such provisions; and

(4) exercise any other authority which such officer or employee is permitted by law to exercise.

SECTION 20.—MISCELLANEOUS ENFORCEMENT PROVISIONS

(a) REGULATIONS.—Each agency that has responsibility or implementing and enforcing this Act may promulgate such regulations as may be appropriate to enforce the provisions of this Act and of any regulations promulgated or permits issued under this Act, and charge reasonable fees for the expenses of the United States incurred in carrying out inspections and in transferring, boarding, handling, or storing animals, plants, Antarctic mineral resources and any other property seized or forfeited under this Act.

(b) BURDEN OF PROOF.—In connection with any action alleging a violation of this Act, or implementing regulations, any person claiming the benefit of any exemption or permit shall have the burden of proving that the exemption applies or that the permit is applicable, has been granted, was valid and was in force at the time of the alleged violation.

(c) STATUTE OF LIMITATIONS.—The statute of limitations for initiating an administrative or judicial enforcement proceeding shall begin to run at the time a violation is discovered by any of the authorities listed in section 19 and shall run for a period of five years.

(d) ACTION AGAINST PERMIT.—If any person fails to pay a civil penalty or criminal fine, the implementing agency may suspend or deny any permit issued to or applied for by such person. The implementing agency shall reinstate such permit or permit application upon payment of the penalty or fine and interest thereon at the prevailing rate.

(e) PAYMENTS OF STORAGE AND OTHER COSTS.—Notwithstanding any other provision of law, the implementing agency may retain sums it receives as fines, penalties, and forfeitures of property for violations of any provisions of this Act, and shall pay from such sums—

(1) the reasonable and necessary costs it incurs in connection with the seizure and forfeiture of property under this Act, including in providing temporary storage, care, and maintenance of such property pending disposition of any civil or criminal proceeding alleging a violation of any provision of this Act;

(2) to a qualifying person any reward offered under section 19;

(3) any expenses directly related to investigations bind civil and criminal enforcement proceedings1 including any necessary expenses for equipment, training, travel, witnesses, and contracting services directly related to such investigations or proceedings;

(4) any valid liens or mortgages against any property chat has been forfeited;

(5) claims of parties in interest to property disposed of under section 612(b) of the Tariff Act of 1930 (19 U.S.C. 1612(b)) or under other provision of the customs laws, as made applicable by this Act to seizures under this Act, in amounts determined by the implementing agency to be applicable to such claims at the time of seizure; and

(6) reimbursement to any agency for services performed, or personnel, equipment, or facilities utilized, under any agreement entered into under section 19, or any similar agreement authorized by law.

(f) PROCEEDINGS UNDER OTHER LAWS.—Legal proceedings brought under any section of this Act with respect to any act shall not be deemed to preclude proceedings with respect to such act under any other provision of this Act or any other law.

(g) INFORMATION GATHERING AUTHORITY.—For the purposes of enforcing the provisions of this Act, or any permit issued or regulation promulgated under this Act—

(1) the implementing agency may require any person who has undertaken activities in Antarctica to—

(A) furnish information relating to his or her activities in Antarctica; or

(B) sample any wastes, emissions, discharges, or releases; and

(2) the implementing agency or its authorized representative may at reasonable times have access to and copy any records relating to activities in Antarctica, and sample any wastes, emissions, discharges, or releases that such person is required to sample under paragraph (1) of this subsection.

SECTION 21.—JUDICIAL ACTIONS

A district court of the United States which has jurisdiction over any case or controversy arising under the provisions of this Act may, at any time—

(a) enter restraining orders or prohibitions;
(b) issue warrants, process in rem, or other process;
(c) prescribe and accept satisfactory bonds or other security; and
(d) take such other actions as are in the interest of justice.

SECTION 22.—FEDERAL AGENCY COOPERATION

(a) Each federal department or agency whose activities affect Antarctica shall utilize, to the maximum extent practicable, its authorities in furtherance of the purposes of this Act, and shall cooperate with the Director in carrying out the purposes of this Act.

(b) The Director shall consult with the Administrator with respect to enforcement of regulations promulgated under section 6(e), and with respect to determining compliance with the terms and conditions of permits issued under section 5(g)(2).

SECTION 23.—RELATIONSHIP TO EXISTING INTERNATIONAL AGREEMENTS, STATUTES, REGULATIONS, AND PERMITS

(a) IN GENERAL.—Nothing in this Act shall be construed as contravening or superseding the provisions of any treaty or other international agreement, if such treaty or agreement is in force with respect to the United States on the date of enactment of this Act, or the provisions of any statute except as provided in subsections (b) and (c) of this section.

(b) STATUTE.—For purposes of any Antarctic mineral resource, the provisions of this Act prevail over any inconsistent provision of the Deep Seabed Hard Mineral Resources Act (30 USC 1401-1471).

(c) REPEAL OF STATUTES.—The Antarctic Conservation Act of 1978 (16 USC 2401 et seq.) and the Antarctic Protection Act of 1990 (16 USC 2461 et seq.) are hereby repealed.

(d) SAVINGS PROVISIONS.—

(1) All regulations promulgated under the Antarctic conservation Act of 1978 (16 USC 2401 et seq.) shall remain in effect until the Director, the Secretary, the Administrator, the Secretary of the Department in which the Coast Guard is operating, or the Secretary of State, as the case may be, promulgates superseding regulations under sections 6, 7, or 8.

(2) All permits issued under the Antarctic Conservation Act of 1978 (16 USC 2401 et seq.) shall remain in effect until they expire in accordance with the terms of those permits.

SECTION 24.—AUTHORIZATION OF APPROPRIATIONS

There are authorized to be appropriated such sums as may be necessary for each of fiscal years 1994 and 1995 to carry out this Act.

Senator KERRY. Thank you very much. Dr. Sullivan, would you please present your testimony?

STATEMENT OF DR. CORNELIUS W. SULLIVAN, DIRECTOR, OFFICE OF POLAR PROGRAMS, NATIONAL SCIENCE FOUNDATION; ACCOMPANIED BY LARRY RUDOLPH, ACTING GENERAL COUNSEL

Dr. SULLIVAN. Thank you very much, Mr. Chairman, for holding this hearing, and for inviting me to appear before your committee this afternoon. I am accompanied today by my colleague, Mr. Larry Rudolph, sitting on my left, who is Acting General Counsel of the National Science Foundation.

Mr. Chairman, we greatly appreciate your abiding interest in Antarctica, and your leadership on legislation to implement the protocol. This hearing represents my first opportunity to testify on Capitol Hill, since my appointment as Director of the Office of Polar Programs at the National Science Foundation.

I would like to very briefly introduce myself to you. I have come to Washington following 19 years as a professor of marine biology and oceanography at the University of Southern California in Los Angeles. My research during that period has focused on marine life

that ranges from, basically, bacteria to whales, in the ice-covered oceans of the Arctic and Antarctic; and I have had what I consider to be the very good fortune to have spent 13 seasons at Antarctica on the ice, performing ecological research.

Since my arrival at the National Science Foundation last May, I have worked to carry out the responsibilities of the U.S. Antarctic Program, and to conduct a world-class science program in Antarctica; and to do so in a way that protects the Antarctic environment. For many years, it has been well-known that NSF grantees perform excellent scientific research in Antarctica and its surrounding frozen ocean.

This month, scientists performing research in Antarctica discovered the largest and deepest ozone hole ever observed; and last year, several of my colleagues from the University of California at Santa Barbara reported on the effects of the reduced ozone, the subsequent increase in ultraviolet light, and the resulting inhibitory effects of radiation on the growth of phytoplankton, which are the tiny plants in the Antarctica seas that form the foundation of food webs, and upon which all life there depends.

This research will make important contributions, not just to understanding Antarctica, but it also addresses global environmental problems, and helps us to comprehend the Earth's system. Now, that Earth system allows us to understand how anthropogenically generated gases in the industrialized world end up in the Antarctica stratosphere to reduce ozone, and increase ultraviolet radiation at the Earth's surface that subsequently limits plant growth there.

I think it is fair to say that it is less well-known, but equally deserving of notice, that NSF is wholeheartedly committed to protecting the Antarctic environment.

Early this week, on Monday in fact, I returned from 2 weeks in Antarctica, reviewing the Antarctic through the eyes of one who is now responsible for the overall program. And I want to tell you that I saw changes. I might also add that, during my research experiences in Antarctica, primarily at McMurdo Station, I observed very significant environmental improvements in Antarctica between about 1980 and 1989; but those changes, however, were not nearly as dramatic as the improvements that have been made over the past 3 years.

I can tell you that McMurdo Station is clean and orderly. Fortress Rocks are clean, and the waste there is neatly lined up and packaged in containers for shipment to waste disposal sites outside of the Antarctic continent.

But perhaps more importantly, I found that the behavior of all the people, whether they were grantees, NSF, Navy, or our contractor, had changed substantially, to one of great personal environmental awareness; and I would be willing to bet that one would be hard-pressed to find even a cigarette butt in the streets of McMurdo these days. I think that reflects much of the program's change in the last 3 to 5 years.

In my new position, I have met personally with representatives of many of the environmental groups, concerned with the Antarctic, and I have also convened several group meetings with the environmental community, and also congressional staffers, to discuss environmental and scientific activities in Antarctica.

I have also just hired three full-time employees with environmental compliance responsibility. One of those individuals, with 28 years' experience, is currently leading NSF's efforts to integrate NEPA into our program. And the other two individuals are already in Antarctica, monitoring compliance with the Antarctic Conservation Act, including waste management practices.

Since coming onboard, my office has worked hard as a member of the administration's team, to develop legislation to implement the Antarctic protocol that Mr. Scully just described so eloquently. We are pleased that, after several months of negotiation, the interagency group has reached full agreement on all provisions of this measure, save one; and work remains to be completed on this section.

Agencies, including State Department, EPA, NOAA, DOD, Coast Guard, Justice, Interior, and NSF have spent many hours on this cooperative effort, hammering out the details of this bill. We believe that our proposal achieves the appropriate balance between protecting the Antarctic environment and maintaining a sound scientific program.

We believe that the draft administration bill, as provided to you by the State Department, will best achieve the objectives of the protocol. It is our opinion that the administration's bill takes advantage of the expertise lodged in various Federal agencies, and provides for comprehensive protection of the Antarctic environment, without unreasonably limiting the flexibility of regulatory agencies.

Mr. Chairman, it was 2 years ago this month that the protocol was signed by the United States in Madrid. It was 1 year ago this month that this body, the U.S. Senate, gave its advice and consent to the ratification of the protocol.

Enacting implementing legislation that balances support for Antarctic science, and protection of the Antarctic environment, will enable the United States to serve as a model to other countries to do the same. On that, I can see, we agree.

Mr. Chairman, NSF shares your goal of implementing the protocol as quickly as possible; and we look forward to working closely with you and the rest of the committee, to enact the implementing legislation proposed by the administration.

I thank you, Mr. Chairman.

[The prepared statement of Dr. Sullivan follows:]

PREPARED STATEMENT OF DR. CORNELIUS SULLIVAN

Thank you, Mr. Chairman, for this opportunity to discuss implementing legislation for the protocol on Environmental Protection to the Antarctic Treaty. We sincerely appreciate your abiding interest in Antarctica and your leadership on legislation to implement the Protocol, and are reviewing S. 1427, the bill that you have introduced.

The Protocol, signed by the United States at Madrid on October 4, 1991, and given the advice and consent of the Senate on October 7, 1992, designates Antarctica as a natural reserve, devoted to peace and science, and establishes a comprehensive environmental protection regime governing activities undertaken there. The National Science Foundation (NSF) whole-heartedly supports its basic goal of requiring that activities be undertaken in a manner that preserves the Antarctic environment, while according priority to scientific research.

ANTARCTIC SCIENCE

Antarctic science continues to make invaluable contributions to our understanding of the Earth, the evolution of the universe, and global ecological and environmental processes. For example:

- In October of 1993, Antarctic researchers observed the lowest ozone levels and the largest ozone "hole" ever. Antarctic researchers in this area are focusing their efforts on ground-based stratospheric chemistry to supplement satellite observations; measurements of increases in ultraviolet radiation coming through the ozone hole; and experiments aimed at understanding the effects of increased UV on antarctic life.
- A four-station Antarctic UV monitoring system is providing a continent-wide perspective on the scope of increased levels of ultraviolet radiation associated with the antarctic ozone hole. Recent results suggest that the ozone hole reduced annual biotic productivity in the antarctic marginal sea ice zone by 7 million metric tons.
- South Pole measurements of microwave background radiation are helping astrophysicists understand the evolution of the universe. Because of extremely clear atmospheric conditions at the South Pole, the quality of data collected there is unsurpassed.
- Bird fossils found on a small island near the antarctic Peninsula are helping us understand how birds were evolving 65 to 70 million years ago. Because there are no other land bird fossils of that age in Antarctica, the discovery also raises questions about why this bird species survived massive, worldwide extinctions at the end of the Cretaceous period.
- An active volcano discovered beneath the west antarctic ice sheet may shed light on how Antarctica's ice contributes to rising sea levels. Investigators who discovered the volcano believe heat from subglacial volcanoes strongly shape the character of today's ice by melting it from beneath and setting the ice aflow in rapid streams.

Antarctica offers unique opportunities for scientific research, in large part because the environment is relatively unaffected by human activity there. The Administration, and NSF in particular, is committed to protecting this unique natural laboratory.

For the past several months, an interagency group, including the Department of State, the Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the Department of Defense, the Coast Guard, the Department of the Interior, and NSF, has been working to develop legislation that will do just that in implementing the requirements of the Protocol. The draft Administration bill, as transmitted to you, reflects the full agreement of all agencies. Work remains to be completed on one section—that dealing with judicial review and citizen suits.

The Administration believes that its draft legislation will best achieve the objectives of the Protocol. It will take advantage of the expertise lodged in various Federal agencies, and provide for comprehensive protection of the Antarctic environment without unreasonably limiting the flexibility of regulating agencies.

ADMINISTRATION DRAFT BILL

The legislative scheme developed by the interagency group has the following basic components:

- *Regulatory Responsibilities.*—The Coast Guard would issue regulations governing marine pollution; NOAA, Antarctic mineral resource activities; EPA, environmental assessment of nongovernmental activities; and NSF, conservation of flora and fauna, protected areas, and waste disposal and waste management. EPA's concurrence would be required for waste disposal and waste management regulations, and NOAA's concurrence would be required for permits authorizing the taking of flora and fauna incidental to the operation or construction of U.S. facilities.
- *Specific Provisions.*—In addition to the Protocol's specific requirements, implementing legislation would require the development of regulations governing incineration and sewage discharges in Antarctica, and would require that the environmental principles set forth in Article 3 of the Protocol be taken fully into account in doing so. Incineration regulations would be promulgated only in the event NSF, in consultation with EPA, and based on sound waste management planning, determines to use incineration as a means of waste disposal.
- *Oversight of U.S. Activities in Antarctica.*—An inspection/review team designated by the Secretary of State, the Administrator of EPA, and the Secretary of Commerce, would periodically inspect U.S. facilities in Antarctica, review USAP environmental practices for compliance with the implementing legislation and the Protocol, and make recommendations to the program.

• *Tourism.*—Tour operators doing business in the United States would have to ensure that their expedition members are informed of statutory obligations, and that non-U.S. vessels chartered by those operators would comply with the marine pollution provisions of the Protocol. In addition, tourists would have to comply with all requirements relating to waste disposal and waste management, conservation of fauna and flora and protected area management. Finally, an interagency group would conduct a study of the tourism issue to determine whether additional measures to limit Antarctic tourist activities are appropriate.

ENVIRONMENTAL PROTECTION MEASURES

Even in advance of passage of implementing legislation, NSF has taken a series of environmental protection measures, some of which are described in the attachment to this testimony. Our more recent environmental accomplishments include:

• Dramatic increases in waste retrograde efforts. The 1991-1992 retrograde effort consisted of 2,759 tons of waste material, equipment and recyclables. The size of the retrograde was the result, in part, of the major cleanup of the Fortress Rocks area and the return of approximately 1,500 55-gallon drums of contaminated fuel, organic solvents, and acids and bases that had accumulated over the years;

• Development and implementation of oil spill prevention and spill management plans; replacement of many rubber fuel bladders with steel tanks and old, short-length fuel hoses with new, long-length "dry break" connections; and ongoing installation of secondary containment systems for fuel storage tanks;

• Commencement of routine monitoring of ambient air and water quality at McMurdo Station so as to gather baseline information and detect unforeseen impacts of U.S. Antarctic Program (USAP) activities; and

• Cessation of open burning of waste at all USAP stations, and preparation of an environmental evaluation of a plan to remove virtually all USAP solid waste from our stations in Antarctica.

In addition to these activities, we have instituted a shipboard observer program to monitor compliance with applicable environmental statutes and regulations onboard tourist vessels; issued final waste management and waste disposal regulations that, among other things, require U.S. citizens to comply with the Protocol's waste management and waste disposal requirements; and have hired additional staff to help enforce applicable environmental statutes and regulations.

CONCLUSION

NSF shares your goal of implementing the Protocol as quickly as possible, and we look forward to working with you to enact the implementing legislation proposed by the Administration. Thank you for this opportunity to speak to your committee.

ENVIRONMENTAL ACCOMPLISHMENTS

• NSF has coupled clean up efforts, particularly at McMurdo Station, with ongoing systems analysis and development of a waste management plan that, among other objectives, establishes an inventory of USAP inputs to and outputs from Antarctica. USAP's refinement of its waste management program will help minimize the environmental impacts associated with USAP operations.

• During the 1991-1992 season, NSF completed the removal of all ground surface debris at McMurdo Station's Fortress Rocks area, and the subsequent evaluation of the cleanup's effectiveness now allows re-use of that area for staging recyclable materials and waste products that are to be removed from Antarctica.

• NSF has made major strides in inventory management to reduce the amount of hazardous materials in Antarctica.

• As part of a program to clean up former U.S. Antarctic bases, a joint USAP/National Park Service effort was conducted at East Base in the Antarctic Peninsula. The former station was cleaned up and established as a protected historic site under the Antarctic Treaty.

• Old Palmer Station, near the present Palmer Station, has been removed and the site cleared of structures and debris. Progress is being made to complete an ongoing clean up at Hallett Station 400 miles north of McMurdo.

• The Antarctic Program has completed over 100 environmental assessments of USAP proposed actions and activities between 1988 and early 1993. These assessments are available to the public on NSF's electronic dissemination system.

• NSF issued procedures for environmental assessment of proposed Antarctic activities consistent with the requirements of the Protocol on Environmental Protection to the Antarctic Treaty.

- NSF has made major strides in returning waste products from inland stations to McMurdo Station for processing and disposal. Over 300,000 pounds of waste were returned from South Pole Station during the 1992-1993 season.
- The USAP, in an effort to move towards its long-term goal of total waste removal, has dramatically increased efforts in the area of waste retrograde. The 1991-1992 retrograde effort was the largest in USAP history, consisting of 2,759 tons of waste material, equipment and recyclables. The size of the retrograde was a result, in part, of the major cleanup of the Fortress Rocks area and the return of approximately 1,500 55-gallon drums of contaminated fuel, organic solvents, and acids and bases that had accumulated over the years.
- NSF has removed dozens of electrical transformers suspected of containing PCBs from Antarctica.
- NSF is using waste heat from power generation to help heat stations.

Senator KERRY. Thank you very much, Dr. Sullivan. I did not realize this was your first appearance. We welcome you, and are delighted to have you here. We are glad you are back, from a long journey.

Let me begin if I can, Mr. Scully. You said you were going to complete work as soon as possible on section 14 dealing with citizen suits. Can you give me a little more sense of what that means?

Mr. SCULLY. I would be hard put to make a prediction, after the past history of this process. But I certainly, Mr. Chairman, would think our commitment is to have the process completed before there were any further congressional consideration of the legislation; and that does not mean seeking any rescheduling.

Senator KERRY. Is it correct that section 14 is really the only section unfinished?

Mr. SCULLY. That is correct, Mr. Chairman.

Senator KERRY. Is it fair to say that the reservation of section 14 for citizen suits indicates acceptance of the concept, and that you are now trying to work out the details for citizen suits; or is there a battle over the acceptance of the concept?

Mr. SCULLY. I think, Mr. Chairman, I should probably not try to represent the views of the various participants in this fracas. But let me say that the effort is one, not to exclude provisions, but to achieve the appropriate balance between on the one hand, provisions that provide, that add to and will assist in the proper oversight of activities, U.S. activities, in Antarctica on the one hand; and on the other hand, that do not provide what we consider to be artificial disincentives to the conduct of science.

Again, we are trying to balance those same two general provisions that you mentioned.

Senator KERRY. Where is the tension here? Let us lay it out on the table. Who is arguing? I take it you are saying the scientific community believes there may be an intrusion in their capacity to conduct scientific experiments?

Mr. SCULLY. As I say, Mr. Chairman, I think it would be hard put for me to try to represent the views of others.

Senator KERRY. Well, I am not asking you to represent them; I am just asking you to set out on the table what their views are.

Mr. SCULLY. I think the elements are: To balance science and the environment. And I think there are concerns on the one hand, with respect to——

Senator KERRY. Who has concerns?

Mr. SCULLY. Those who undertake—I think both sides have concerns, Mr. Chairman; the sides being those who are interested in

the conduct of scientific research in Antarctica on the one hand; and those who are looking at trying to achieve the optimum degree of environmental protection on the other.

Senator KERRY. Well, there are plenty of big-moneyed interests and major players, who have to adhere to the Clean Water Act; are there not?

Mr. SCULLY. Indeed, Mr. Chairman.

Senator KERRY. And there is a framework that was arrived at there; correct?

Mr. SCULLY. That is my understanding, Mr. Chairman.

Senator KERRY. And there are plenty of people who have similar interests, and complicated lives in business, and so forth with regard to the Clean Air Act; correct? And a framework was arrived at there. The Endangered Species Act; the same, correct? The Safe Drinking Water Act. Toxic Substances Control Act. I mean, I can run down the list. There are 16 different acts which have private citizen suit capacity. There are a lot of models here.

Why is there such a problem? How many citizens are going to run down to Antarctica and bring a suit?

Mr. SCULLY. Mr. Chairman, I think again we are seeking to balance, on the one hand, what we have achieved in a variety of environmental, in the kinds of environmental legislation that you have mentioned, with what are some rather unique circumstances in Antarctica.

Senator KERRY. Well, are frivolous lawsuits a concern?

Mr. SCULLY. The concern as I understand it, Mr. Chairman, is that, given the special characteristics of the research season in Antarctica, that litigation—whether frivolous or not—could create a deterrent effect on the conduct of science, which is not analogous to the situation that would be created with respect to the other pieces of legislation that you have cited.

Senator KERRY. Well, can you give me a sense, so I can try to think this out as we proceed? Because, as you know, we have some provisions that are set out in S. 1427.

Mr. SCULLY. Understood, Mr. Chairman.

Senator KERRY. Can you share with me what is overreaching, or underreaching, or inadequate, in S. 1427?

Mr. SCULLY. I think a more detailed discussion of those provisions of 1427, I would prefer to provide for the record.

But I think, again, Mr. Chairman, the question really is one of: What would be the effect, if there were provisions, if there were the full panoply of provisions that have been aggregated from other legislation? Whether or not there would be a situation in which scientific activities could be held up?

Now, on the other hand, as I say, there is also an interest in ensuring that there is the kind of provision that is necessary to ensure full oversight of activities in Antarctica. It is a question of achieving a balance, I think.

Senator KERRY. But you cannot be specific about where the imbalance exists in section 14?

Mr. SCULLY. I think, Mr. Chairman, that I would be not responsible, in terms of my role in the interagency process, if I were to try to do so at this point. But as I said, we hope to have that result within a matter of days.

Senator KERRY. Well, you know, I am not going to belabor it. I will take your word and hopefully it will be resolved in the next few days. I am sure you will balance it out in the interagency process, but I think that it is important not to lose sight of models that exist in the 16 other statutes.

I also think there is going to be a high level of scrutiny with a fairly strong standard, for a compelling interest to negate why a similar standard is not applied in the Antarctic. So, I am sure you will bear that in mind, and will proceed on from there.

Mr. SCULLY. Indeed.

Senator KERRY. Let me also raise another concern that I have regarding the weaker environmental safeguards contained in the protocol compared to those established under current U.S. law. Let me give you a couple of examples.

First, the Antarctic Conservation Act of 1978 allows takings of wildlife only for scientific purposes or for museums, but the protocol allows takings of wildlife in the construction and operation of scientific base facilities. Second, in the area of waste disposal, the protocol establishes standards that are weaker than those established by the Clean Air Act and the Clean Water Act.

With respect to takings, both legislative proposals require the concurrence of the Secretary of Commerce to issue a permit; and now our proposal, S. 1427, mandates that the permitted activity be in the national interest, and there be no environmentally better alternative.

Do those requirements provide adequate protection? If not, why is the change from current law needed?

Mr. SCULLY. Mr. Chairman, you have asked 4 or 5 different questions, and I will try to sort them out briefly. Again, I would be happy to provide additional material for the record.

I do not share the view that the protocol is weaker than U.S. domestic law, with respect to its substantive provisions; and I make that point both with regard, I would start with the question of the taking of flora and fauna, Mr. Chairman.

I do not share the interpretation of the existing Antarctic Conservation Act. The provisions of the protocol which deal with what is called the "incidental take provision," the question of the taking of species or the harmful interference with species, which is incidental to the operation of a station or to the construction of a facility in Antarctica, in my view is an improvement of the situation, is an improvement on the Antarctic Conservation Act, and an improvement under the international agreed measures upon which they were based.

Senator KERRY. I appreciate that, but does not the act prohibit those takings?

Mr. SCULLY. The agreed measures for the conservation of flora and fauna, and the act to implement them, in our view created an anomaly; in the sense that it is virtually impossible to operate a station in Antarctica, or to construct a facility in Antarctica, without a taking within the meaning of the agreed measures, or within the meaning of the protocol, which has extended that definition.

What has been done, it seems to me, by requiring that any such taking to be permitted, is in fact to force those who are constructing stations, or force those who are operating stations in Antarctica

for important scientific purposes, to address this issue, to assess the impact, and take steps to bring any such incidental take under control. So, we see it as a stronger provision.

Senator KERRY. Well, that is an interesting interpretation, but I want to think about it.

Mr. SCULLY. On your questions on the Clean Water and Clean Air Act, Mr. Chairman, we looked very much at those provisions in drafting the legislation and seeking to interpret the provisions of the protocol. I would note that I think, with respect to incineration, which is the area where the Clean Air Act is most directly raised, or the kinds of provisions, we have sought to take the provisions of the protocol itself and interpret it in terms of future regulations based on the provisions of the Clean Air Act.

Again, the situation that we find when we get into detail is that the Clean Air Act, like a lot of other environmental legislation, important environmental legislation, was not drafted with that article in mind when it was drafted. And there are some particular situations in that article that were not anticipated.

For example, the kinds of incinerators that have been——

Senator KERRY. What was not drafted with that in mind?

Mr. SCULLY. The Clean Air Act or the Clean Water Act, the two I think that you mentioned.

Senator KERRY. Obviously.

Mr. SCULLY. With particular respect, for instance—and, again, this is just an example, Mr. Chairman—of incineration, where I think the greatest degree of attention was focused, it turns out that the kinds of incinerators which have been considered for operation in Antarctica, the size of that incinerator has never been addressed under the Clean Air Act, or the standards or guidelines for the operation of those.

So, again, once one gets into—as one says, the devil is sometimes in the details——

Senator KERRY. But does it require exactly the same standards of emission no matter what the structure may be like?

Mr. SCULLY. Well, what the Clean Air Act—and, again, I would be the first to say that I am not an expert on the Clean Air Act—the Clean Air Act sets forth a standard, and then provides for a very detailed process of developing those standards into detailed regulations and guidelines for particular categories of incinerators.

I think that what we are seeking to replicate here—and we are in fact going beyond the protocol in terms of the specific language with regard to the draft——

Senator KERRY. On the Clean Air Act?

Mr. SCULLY. On the incineration aspect of the Clean Air Act.

Senator KERRY. The incineration aspect?

Mr. SCULLY. Yes. Yes, indeed.

Senator KERRY. But not as to other aspects or not as to the Clean Water Act? For instance, you do not have the same requirements as to sewage disposal, vis-a-vis the CWA, that you do for——

Mr. SCULLY. Understood. And I would make the same point that I made earlier, Mr. Chairman. I do not believe, again, that the Clean Water Act was drafted with the specific kinds of particular circumstances in an Antarctica that exist.

Senator KERRY. Well, let me ask you this. In terms of the Clean Water Act, there are particular emissions that are different, but there are many that are similar. Is not the issue less what waste is treated then the final result; meaning that what is eventually dumped into the water is the most important consideration. Therefore, why would we not want human refuse and other kinds of waste that is being dumped into the waters of Antactica to meet those same requirements?

Mr. SCULLY. I think I am not an expert on the specific process that exists right now at the U.S. station there. This would primarily—I think the questions would primarily relate to the two U.S. coastal stations.

Senator KERRY. Right now, I believe treatment is limited to breaking up the wastes, and that means we are dumping into the supposedly fragile ecosystem untreated sewage.

Mr. SCULLY. I think, Mr. Chairman, that the—and, again, I would have to, since I am not an expert on the technical aspects of sewage disposal, I would simply—I think I would like to provide additional material for the record.

[The information referred to may be found in the committee files.]

Mr. SCULLY. But let me say that the waste disposal provisions of the annex generally are designed to ensure that insofar as the waste water stream that might be generated by U.S. coastal stations in Antarctica, that those do not include—they would not include the kinds of substances we might find in municipal sewage systems in the United States. So, we are talking largely about human waste, not about chemicals or other sorts of things that might be disposed of in the kinds of municipal systems we have here in the States. That would be one difference.

And the number of humans that are there, vis-a-vis, you know, comparisons with any other bodies of water elsewhere, are very, very small. I just note those as differences.

The only other point I would make on this one is that when you start looking at things regarding secondary treatment, which themselves can involve chemical processes and the generation of heat, one may be creating more environmental problems by the use of such techniques in an environment such as Antarctica than would be the case if they were not used.

So, it becomes a very complicated technical problem, one I think that a lot of talent and effort is being applied to resolve in the most environmentally sound fashion.

Senator KERRY. Well, do we have any models on that at this point as to what the curve is between the quantity and amount of waste being dumped versus the impact on the environment of the treatments and alternatives?

Mr. SCULLY. I think we are looking at the analogies in the Arctic, Mr. Chairman, but they are not always the same.

Senator KERRY. Well, that is a legitimate question. If you put in a treatment center you may wind up emitting a lot more. We need to find a fair balance, and this issue needs to be thought out. I think we should have an answer to that question and whether there are other models we can look to?

Mr. SCULLY. Well, I think it is certainly a matter that everyone—that those involved in polar activities generally, since it is a problem that also, obviously, arises in the Arctic. There is a lot of effort to develop technologies that will be appropriate for those kinds of conditions. I do not think we have a full answer, but perhaps Dr. Sullivan does.

Senator KERRY. Do you have any knowledge on that, Dr. Sullivan?

Dr. SULLIVAN. Yes, I do, Senator. I have sort of theoretical knowledge of it and firsthand knowledge, because I was standing at the juncture of where the sewage lines come out of McMurdo dormitories and the town, basically, going into the near shore environment. And it is very much as you describe it. That is, the sewage passes down through the pipes. There is a rotor that breaks any particulate material into smaller particulate material, but it does not, in a sense, totally liquify the particulate material. And that is released into the environment without any further chemical or mechanical treatment.

Secondary treatment would remove particles in some sort of a sludge settling pond if you were doing this in Los Angeles or Washington, DC. And that particulate then could be moved.

I think this is a very good example, and I am glad you brought it up, because it really illustrates my point—this provision in the legislation brings up many of the issues that we face when we manage a program that has special limitations of logistics, harsh environment, short operating seasons, and, basically, an unfamiliarity of how to effectively live in a very constantly cold environment.

Senator KERRY. OK, but, look, we are scientifically astute enough to be able to quickly measure the impact of a treatment facility on X amount of sewage and determine whether the heat/emissions are greater than the amount of sewage we are dumping and how much sludge it produces.

Dr. SULLIVAN. Yes.

Senator KERRY. This is about a day's work for an intelligent person.

Dr. SULLIVAN. I agree with you, sir. I think what this will require is an engineering study on how to meet the standards for emissions. It will require an environmental assessment as to how to proceed, which is really I think what you are talking about—a combination of the environmental and the engineering considerations. And we can come up with answers to determine whether it is better for the environment.

It is clear that you would have to provide heat.

Senator KERRY. Well, it is all one big environment.

Dr. SULLIVAN. Yes, sir.

Senator KERRY. It seems to me that if we have decided it is worth dealing with most of the sludge and we have decided to meet clean air standards, by reducing the emissions to a supportable standard, in effect operating in accordance with both standards in the Antarctic, it seems to me you are doing the least possible damage to the environment.

Mr. SCULLY. That is correct.

Senator KERRY. Unless we are trying to find a way to avoid the responsibility for it.

Dr. SULLIVAN. But it is certainly not a desire to avoid the responsibility. It is a focus of our attention to do an assessment of this particular outflow.

Senator KERRY. Why would the environment of the Antarctic be different? It is one thing if there were 10 people, but that is not what we have in McMurdo Sound. We have, as you say, a fair and growing community of use. Is it going to get bigger or is it going to stay the same?

Dr. SULLIVAN. We have several questions on the table. I will try to answer the three that I can think of initially. One is, you asked about with regard to sewage and Clean Water Act, is it—Antarctica—different? And following up on Tucker Scully's comments, it is different in that the clean water bill I believe was designed, as he said, with domestic problems in mind, and protecting groundwater primarily.

In Antarctica, there is no groundwater. As a matter of fact, there are not even any rivers in Antarctica. There is a small stream that flows for about a couple of weeks, called the Onyx River, but it is a trickle that comes out of a glacier.

There are several lakes, but they are covered with 18 feet of ice. So, we do have some different situations purely in terms of the environment. In terms of figuring out how best to treat sewage effluent and what we need to make a system work there under those conditions, we need to consider that we would have to heat the entire sewage effluent plant and the sewage effluent in order to keep it at a temperature under which microorganisms are active—at least microorganisms from the temperate zone where they live and could operate.

However, there are organisms in Antarctica that live in the ice and the ice/water interface and, under certain circumstances, with proper engineering, they may be, in effect, called upon in new bioengineering technology to do something useful.

So, I think there is both a practical firsthand, if-well-thought-out solution, and then there are some ways that we could pull ourselves up by our own bootstraps. That is, we work with a research community that can solve that problem, I believe.

Senator KERRY. Do you know if there is a seasonal impact on that flow of sewage?

Dr. SULLIVAN. There is a dramatic seasonal flow, and that is related to the third question, interestingly enough. The summer population of McMurdo usually tops out at about 1,200 people, and in the winter, about 250. So, you have a fivefold difference in the amount of material that has to be treated by sewage treatment seasonally.

Senator KERRY. Are there currently hard figures on that amount of material?

Dr. SULLIVAN. If there are, I could not give them to you off the top of my head. But I am sure I could provide it to you for the record from our engineers.

Senator KERRY. Well, I think that would be a good beginning point and helpful.

Dr. SULLIVAN. Certainly.

[The information referred to follows:]

SEASONAL SEWAGE AMOUNTS AT MCMURDO STATION

The sewage at McMurdo depends almost entirely on the amount of water produced. In the summer it is 50,000 gallons per day, in the winter it is about 12,000.

Senator KERRY. Has there been any determination or any study as to the capacity of the receiving waters to absorb raw sewage based on the ocean flow and currents?

Dr. SULLIVAN. I know that there were some studies that were done while I was a scientist working in the field. I have not seen the reports, but I know they have been done in various ways.

One thing from personal knowledge of this area, I know a number of people who do their research in this area, both to address the environmental problem and others, and that is they have been diving in this embayment, which is a natural environment that holds any particulates close to the shore in a highly restricted area that is a few hundred square meters, actually. I would say it is a little larger—actually, about the size of this room, frankly.

And if we wanted to disperse the material over a larger area, either as particulates or as secondary or even tertiary treatment, that can be done.

Senator KERRY. Sure.

Dr. SULLIVAN. There is a big problem, however, that you do not have in Washington or Los Angeles, and that is you have eight feet of sea ice that comes right into the area where the sewage pipe comes into the ocean, and that is a tremendous force that can break up the pipe, break up a diffuser and so forth.

Senator KERRY. I understand.

Dr. SULLIVAN. So, there really are some pretty unique circumstances here that we need to think through very, very carefully before we take action. And that is a matter of policy for us to do that.

Senator KERRY. Well, I accept that. I think the key here, though, is to try to find a way to guarantee that minimal potential damage is done in the meantime, if any is being done. And apparently, we do not have the answer to that. Is that accurate?

Dr. SULLIVAN. We do have some initial reports.

Senator KERRY. OK.

Mr. RUDOLPH. Mr. Chairman, I might add just briefly that several years ago we wanted to respond to that immediate concern, and there were some initial studies as to whether to keep that outfall either above surface or submerged below surface in order to lessen the impact in that area. So, there was some initial action, just as you said, at least for that intermediate concern.

Senator KERRY. Well, now, Mr. Scully, moving on to another section. Your proposal, at least at our reading, seems to indicate a NEPA exemption for those activities that involve another nation, where the other nation assumes responsibility for environmental coordination of a particular plan.

Is that an accurate interpretation of the administration's proposal?

Mr. SCULLY. I do not believe that is an accurate interpretation, Mr. Chairman. I think the issue is a very complicated one. First of all, generally what we have tried to do in this draft legislation

is to integrate the provisions of the protocol on environmental impact assessment with NEPA. We start from the premise that NEPA applies.

Senator KERRY. Correct.

Mr. SCULLY. Now, the protocol itself includes provisions that are in some ways stronger than NEPA, so what we have tried to do is to write the provisions—and it was a very complicated process—of the protocol so that there is one process for assessing the environmental impacts of Federal agency activities. I note also that since NEPA does not apply to non-Federal activities, we need to provide for the implementation of the protocol's provisions to nongovernmental activities, which is also called for.

But with respect to this specific point, again I would like to provide more detailed material for the record. But the protocol's environmental impact assessment provisions, which include those that I mentioned in article VIII in annex 1 to the protocol, apply to activities whether or not they are carried out jointly.

The protocol also, however, requires that those parties that are planning joint activities must designate one party to coordinate the implementation of the environmental impact assessment procedures under the protocol. Now, the whole issue of the application of U.S. environmental impact assessment requirements to activities undertaken jointly with other governments is a very complex and complicated one, and here I do not simply refer to Antarctica.

The group that examined these issues in preparing the legislation is well aware that there is also within the administration a broader review of the overall application of U.S. EIA requirements to actions taken abroad generally. Therefore, when we drafted the legislation we did so in a way that intentionally does not seek to prejudge the outcome of that review, that other broader review with respect to NEPA, and in particular not to prejudge now the U.S. environmental impact assessment requirements should apply to joint activities in Antarctica. I note specifically——

Senator KERRY. That is sort of key language.

Mr. SCULLY. Yes.

Senator KERRY. What does that mean?

Mr. SCULLY. Well, what it means, Mr. Chairman, is that we are leaving to the—and that is why the reference is made to the President in designating the agency to develop specific regulations in terms of how to define joint activities, to make it consistent with that. The idea is, Mr. Chairman, that this legislation, since it has to be enacted and, in our view, should be moved before the results of that other review are completed, should leave that issue entirely open.

But there certainly are situations that one can envisage where another government clearly had the lead for a joint activity, would be pursuing the environmental impact requirements of the protocol in a manner that we would feel would entirely satisfy the necessity for EIA of that project. But as I say, we did not seek to prejudge that issue in any way in this legislation. It is not designed to be a loophole. It is not designed to be an exemption.

Senator KERRY. Well let me pursue that just for a minute, if I can, so I understand it.

The enabling language for this joint shift of authority is paragraph 2(b) of section 7, where you say:

> Where the Secretary of State, in cooperation with the lead U.S. agency planning an Antarctic joint activity and with the other government or governments involved, determines that a government other than the United States, which has signed or acceded to the protocol, is coordinating the implementation of environmental impact assessment procedures for that activity, the requirements of subsection (a) of this section shall not apply in respect of that activity.

The subsection (a) that does not apply in that activity includes paragraph (2)(a) which says that unless an agency which proposes to conduct a Federal activity determines the activity will have less than a minor or transitory impact, that a comprehensive environmental evaluation is required.

So, you have essentially waived the requirement for the environmental impact statement merely by virtue of having turned over the coordination to another country of the environmental program?

Mr. SCULLY. Two points on that, Mr. Chairman. First of all, that——

Senator KERRY. I am just trying to tell you how I read it.

Mr. SCULLY. Yes. And I recognize that this is complicated, and it is complicated by the fact that we have environmental impact assessment procedures in the protocol which are very far-reaching, but that are not expressed in identical language to the National Environmental Policy Act. And at the same time we would, through this legislation, apply the National Environmental Policy Act to at least major Federal activities or to Federal activities in Antarctica.

So, it is a complicated thing. But, first of all, the protocol itself refers to the need that when there are joint activities—now, I refer to article VIII, paragraph (4). There is a specific reference in the protocol that when activities are planned jointly by more than one party, the parties involved shall nominate one of their number to coordinate the implementation of the EIA procedures that are set forth in the protocol and in the annex thereto.

Senator KERRY. Article VIII.

Mr. SCULLY. VIII(4) of the protocol itself.

Senator KERRY. Section 9?

Mr. SCULLY. Well this is in the protocol.

Senator KERRY. In the protocol.

Mr. SCULLY. In the protocol. So, this is to give effect to a provision of the protocol itself.

Senator KERRY. Well, direct me back to that.

Mr. SCULLY. Yes. It is article VIII of the protocol, paragraph (4).

Senator KERRY. What does article VIII paragraph 4 say?

Mr. SCULLY. Where activities are planned jointly by more than one party, the parties involved shall nominate one of their number to coordinate the implementation of the environmental impact assessment procedures set out in annex 1, and annex 1 sets forth the very detailed EIA procedures.

So, in part that provision is designed to give effect to that. Now, I would note that this provision is limited——

Senator KERRY. But that is not NEPA.

Mr. SCULLY. Well, that is not NEPA because other parties are not bound by NEPA.

Senator KERRY. I understand.

Mr. SCULLY. Second, Mr. Chairman——

Senator KERRY. But that is not the issue. The issue is can the United States avoid NEPA compliance by assigning environmental assessment responsibilities to another country?

Mr. SCULLY. Can I just complete the thought and then I will come back to the general point. First of all, this is limited to parties to the protocol, so that there is—the only circumstance in which this provision would kick in would be for parties that are also bound to the same environmental impact assessment procedures through the protocol, procedures that are determined in the findings to be consistent with NEPA.

Now, if there were a situation—and, again, one of the reasons we are trying to leave some of this to regulation, Mr. Chairman, is that it does depend on the outcome of this other policy review that I have mentioned. But let us assume an extreme case, for instance, in which there was a foreign—a party to the protocol was conducting a major scientific activity in which we had a very small part. Now, we are bound, in a sense—that is by a Federal agency, a U.S. Federal agency, we are participating as a minor participant in such a proposal.

What we are saying here is that that agency should not be subject, or that that project should not be subject to two separate environmental impact assessment procedures. If another government had the lead on that proposal, it would be required to fulfill all of the obligations of the protocol with respect to environmental impact assessment, including providing all the environmental impact assessment to us, making it public.

We would circulate that and treat that documentation as if we had prepared it ourselves domestically. In other words, it would be subject to the full public review and comment process, and then the procedures which would call for that process to be completed before any decision were made to go ahead with the activity, pursuant to the protocol. So, the question——

Senator KERRY. I think I follow you.

Mr. SCULLY. Yes.

Senator KERRY. I think I do. But it is certainly the grist for a good lawsuit or two and a lot of legal time spent.

Mr. SCULLY. We understand that, Mr. Chairman. But, again, when one looks at——

Senator KERRY. But let me come back to it for a minute. I still am troubled that in your language there is an avoidance of the court of appeals decision and the desired goal, to hold others to the standard that we are holding ourselves to.

As I follow your explanation, as well as the language here, there are really two procedures. First, for a U.S. activity that is not joint, does not have an impact on the other nations, then you are willing to accede to the NEPA requirements. Second, in the case of joint activities, paragraph (2)(c) is being followed, which is effectively the protocol's environmental evaluation, you do not have to do the NEPA standard.

Mr. SCULLY. I do not share that interpretation, Mr. Chairman. Because I think, first of all, the reason that—this does not carve—this simply—this provision in this section with respect to joint ac-

tivities does not carve out all joint activities, because it leaves it to be defined as to what are joint activities.

Now if, Mr. Chairman, the——

Senator KERRY. That is a loophole.

Mr. SCULLY. I do not see that.

Senator KERRY. If you want to avoid doing this, you can play with the definitions after the fact.

But, see, this says "unless a comprehensive environmental evaluation is being prepared in accordance with paragraph (2)(c)." So, the minute you get something being performed in accordance with paragraph (2)(c), you do not have to, under your own language, comply with NEPA.

Mr. SCULLY. You do have to do—you do have to follow the requirements of the protocol, Mr. Chairman.

Senator KERRY. Only of the protocol. But the protocol is a different standard and that is the whole point.

Mr. SCULLY. The protocol, in our view, is a stronger standard than NEPA.

Senator KERRY. You think it is.

Mr. SCULLY. The protocol's standard requires a CEE to be done on all activities that have more than a minor or transitory impact, as opposed to a significant effect on the environment.

Mr. RUDOLPH. Mr. Chairman, if I could just——

Senator KERRY. Yes, go ahead.

Mr. RUDOLPH. As you can tell just in this brief discussion, this is a complicated effort to try to make sure that no activity avoids the type of assessments that should be done either under NEPA or the protocol.

Senator KERRY. Well, I am sorry to be suspicious.

Mr. RUDOLPH. I understand. I think the intent behind this provision was clearly to make sure that any such activity is either covered by one or the other, it is not a loophole.

Senator KERRY. This is easy to resolve. It is not that complicated. I think if we could spend some time with staff doing two things. No. 1, I want to cross-check the evaluation on NEPA versus the protocol standard. And No. 2, I want to make certain that the language is such so that we know that a sufficiently appropriate strong standard is being applied. Fair?

Mr. SCULLY. We think we have met that test and hope we can convince you of that as well, Mr. Chairman.

Senator KERRY. OK. Let's just try to play out the language differentials here and make sure that there is not a misinterpretation on it. I am not at this moment familiar enough with all the aspects of the protocol's detailed requirements, so I want to compare them and get a better sense of their different requirements.

On the issue of public vessel compliance, S. 1427 proposes to set aside the exemption certain kinds of warships, naval auxiliaries, and other Government-owned and operated ships, from compliance with annex 4 of the protocol.

First of all, how many and what type of vessels travel to Antarctica to support that program in total? What would you say? Do you know?

Mr. SCULLY. I think I would probably have to defer to NSF, but very few vessels are required to support the U.S. Antarctic Program.

Senator KERRY. If there are very few, then why is an exemption necessary?

Mr. SCULLY. Two points, Mr. Chairman. I think here we are talking about an issue which is of major precedential value. The question of sovereign immunity for vessels, including public vessels, U.S. public vessels, not private vessels, is one that comes up in a variety of international fora. The provisions are included in the annex because they are also included in the relevant international marine pollution convention, which is the MARPOL 73–78 convention. And we have much broader interests in that convention in terms of preserving the principle of sovereign immunity.

We do not see that, however, as a way of avoiding the obligations. And our understanding is that all U.S. public vessels involved in support of the U.S. Antarctic Program will fully comply with all of the provisions of annex 4 and the provisions of the protocol. It is more a question of the precedent and the question of the sovereign immunity issue as a matter of international law, Mr. Chairman.

Senator KERRY. Annex 4 requires that discharge of oil must be in accordance with MARPOL 73 and 78.

On other liquids and solid wastes within the Antarctic area south of the 60 south latitude, ships have to retain on board, in tanks, all sludge, dirty ballast water, tank washing waters, and oil residues and mixtures, any noxious liquid substance, all plastics, and all other garbage, paper products, and rags. Food wastes may be disposed of, if passed through a grinder, but not less than 12 miles from the nearest land. Finally, sewage cannot be discharged within 12 miles from the nearest land or the ice shelf.

Now, why should there be an exemption from annex IV of the protocol for these very few ships?

Mr. SCULLY. To repeat, Mr. Chairman.

Senator KERRY. I mean under the provision of sovereign immunity.

Mr. SCULLY. Those provisions already are implemented under APPS.

Senator KERRY. I missed that.

Mr. SCULLY. Under the Act to Prevent Pollution from Ships. When these provisions were developed for the protocol, or even prior to the negotiation of the protocol, Mr. Chairman, we took the view that in order to provide the maximum coverage for these provisions in Antarctica, that we would try to implement them both through MARPOL 73–78 by designating Antarctica as a special area for a variety of purposes under that convention, and implement them under the protocol.

This was a way of picking up coverage of parties to both the MARPOL and to the Antarctic Treaty, so that we extended the coverage. So, those provisions are already in force insofar as the United States goes. U.S. vessels, all U.S. public vessels comply with those provisions. So, I think it really does come down to the issue of sovereign immunity and a more precedential character. And that is—again, I think, once we start talking about the question of

changing sovereign immunity provisions, we are into a much broader area.

Senator KERRY. Why are you changing them? We have waived sovereign immunity as to our adherence to the MARPOL standards.

Mr. SCULLY. Some of the MARPOL standards, Mr. Chairman, in our domestic law. And those are included already because we are—that is one of the reasons why we chose to use the path of amending the Act for the Prevention of Pollution from Ships, because all of those provisions are already there.

Senator KERRY. Again, why would you have an exemption from compliance with annex IV for those few vessels?

Mr. SCULLY. We are implementing them here. What we would be doing in this implementing legislation would be making very few changes to the act to prevent pollution from ships. We would not be changing that, we would not be adding anything that does not already exist in APPS. We would not be adding new exemptions; because the exemption in this instance, when you amend APPS, comes from MARPOL.

And I think the problem is that, once you get into the question of trying to deal with that legislation, you are looking at, again, almost inevitably, you are into the broader issue of the precedent with regard to sovereign immunity; and that raises a whole series of issues that go beyond Antarctica.

We are confident that all the vessels to which we have reach, whether they are entitled to claims of sovereign immunity or not, will fully comply with all of the provisions of annex 4.

Senator KERRY. By virtue of what? Of the APPS?

Mr. SCULLY. By virtue of APPS, and by virtue of the commitment of those that operate the vessels to ensure that they comply. In fact, we made sure that we would not undertake any obligations with which all U.S. vessels could not comply, regardless of whether or not one could make an assertion of sovereign immunity.

Senator KERRY. Would there be, in your view, any implication operationally, or in terms of construction, for any vessels in the United States, if we did not provide that exemption for the vessels?

Mr. SCULLY. I think, again, we have broad reasons related to the mobility of our naval forces, et cetera, for continuing to support sovereign immunity as a principle within major international agreements. Since, in this case, we took the path of implementing for environmental reasons these provisions—not only through annex 4 of the protocol, but also through the designation of Antarctica as a special area under MARPOL, to achieve broader coverage—we would have a problem, it seems to me, if we sought to change that through this implementing legislation; because we would not only be looking at this specific annex, we would also be looking at the whole MARPOL system.

And our view is that the tradeoff is a good one, in terms of extending the coverage to vessels. And that we, the United States, will make sure—and we can give those assurances—that all U.S. vessels will, regardless of whether or not they are entitled to claim sovereign immunity, comply with these provisions.

Senator KERRY. Thank you for that information. I need to analyze your postion, but at least on its face, you have presented an interesting observation and I would like to understand it better.

Mr. SCULLY. We will be happy to provide more material on this issue.

Senator KERRY. I take it that you will, and I am sure we will give you the opportunity to do so.

Just quickly, on a couple of other things: Your proposal asks the NSF Director to consult with the EPA Administrator; and I just want to understand what "consultation" means here.

Mr. SCULLY. I should probably turn to the representative of the NSF Administrator; but the consultation provisions, and this again is with respect to waste permits in particular, would be following the promulgation of regulations that would require the concurrence of the two. The two would have to work together.

So, I think, at that point in discussing agency responsibilities, which is the major issue in all of this, it did not seem necessary to have the same requirement, since the two of you will have been locked in an embrace in terms of preparing the specific regulations upon which the permits would be determined.

And I think it was made, again, to make sure that there were not unnecessary delays built into a system where permits probably were time-critical, with respect to the research season.

Senator KERRY. If the EPA Administrator disagrees with the Director on a particular permit application, what happens? Can the Director still proceed to issue a permit?

Mr. SCULLY. I think, again, ultimately in these circumstances, the Director would have the authority; but of course, those are the kinds of issues that are taken up within the executive branch and in various interagency groups, et cetera. And we are confident that those kinds of provisions would be worked out.

Senator KERRY. Does the NSF have a view on that?

Dr. SULLIVAN. Yes, Mr. Chairman. We believe that these issues can be worked out; because the discussions not only will go on at the highest level, but we have formed such a strong working relationship—not only with regard to developing the implementing legislation; but in fact, during the period of our trials and tribulations with the incinerator, we were always following EPA standards, consulting EPA on how to improve the actual functioning of the incinerator.

Senator KERRY. Have you looked at alternative technologies, with respect to waste disposal?

Dr. SULLIVAN. Actually we have, Mr. Chairman; but it is not a high-technology approach. It is an approach over moving the waste from Antarctica; either to the United States, and having that waste handled according to Federal and State law there. Most recently, we removed 57 tons of food waste from the previous season, and that is now in a landfill in California.

We have also removed smaller amounts of food waste, that was placed in New Zealand, with concurrence of the local government there, and according to their standards. And we have also received inquiries from Australia, from various private companies who are interested in soliciting our business, in effect, to help us address

some environmental problems by handling the disposal of wastes in Australia as well.

It has not been a high-technology approach; but it has been an effective approach.

Senator KERRY. Now, Mr. Scully, in the administration proposal, there is a reference to residual regulatory authority. Can you be more specific about residual regulatory authority and where it would be applicable?

Mr. SCULLY. Well, in two senses, Mr. Chairman. First of all, we think generally that the agencies that have responsibility for promulgating regulations to implement the protocol with respect to a particular area, should have general authority to deal with circumstances that the protocol itself may not have anticipated.

So that we would believe that the general regulatory authority should be there, so that we were able to, if necessary, move to address situations that we have not been able to anticipate. And a lot of work went into the protocol. But obviously, one cannot foresee everything that might possibly occur by way of potential activities in Antarctica.

Second, there was a discussion of the principles, of the environmental principles, as they are called in article III of the protocol. And the question of residual authority was—specifically, in linking that residual authority to the article III principles—was a way of finding a compromise on how to deal with the environmental principles, which are legally binding, of course, under the protocol, but which in some instances are repeated or are dealt with in much more detail in the specific annexes to the protocol that are included, which involve very detailed regulation.

So, there was a, an approach was developed—a compromise approach—to deal with that issue, which involves including all of Article III as a statement of policy in the legislation itself. And second, then, linking the residual general authority that is provided to agencies to article III.

I would note that there were two areas identified in our discussions, and we have touched already to some extent on them, which are incineration and sewage; where the protocol itself was not as specific in terms of the standards as was, say, with the case of the conservation of flora and fauna, et cetera. And there, we would make specific reference in terms of developing the specific future regulations to deal with incineration, if incineration is ever considered a viable option; and with respect to sewage discharges, of incorporating those principles as a basis, along with U.S. domestic legislation as a basis for developing standards.

So, it is part of an overall approach to dealing with a situation and a way of implementing, we hope in an effective way, the protocol as a whole; which has general principles, but also has detailed regulations.

Senator KERRY. With respect to the annexes, do you think that we should be considering the adoption of an annex that deals specifically with non-Governmental activities?

Mr. SCULLY. That issue has been discussed at length, Mr. Chairman, among the treaty parties themselves. It was discussed during the course of the negotiations. At that time, we did not believe that an additional annex on tourism and nongovernmental activities, as

I think the issue was described, was necessary; although we believe that is an issue, and continue to believe that it is an issue which must be kept under careful review.

One of the reasons that we had difficulty with proposals that were made by others, other parties to the treaty, to have such an annex was that they rested on a presumption that we did not share: And that was the presumption that, somehow, all of the provisions of the protocol as they stand somehow did not apply to tourist and non-Governmental activities. In our view, they do. And the protocol is clear on that point; and the implemention of the protocol, we think, will have a very salutary effect on the regulation of tourism.

On the other hand, we have included in the legislation the call for an interagency study to be conducted, a broad study of the issue of tourism, trends, et cetera, in Antarctica. So, we are abreast of the situation, and are in a position to recommend additional measures if and when they are necessary; including the possibility of an annex.

Senator KERRY. Dr. Sullivan, with respect to the overall balance between the Antarctic environment effort and the scientific needs that we are trying to meet there, particularly given your recent visit, how well do you think we are achieving that balance? What is your sense of where we are?

Dr. SULLIVAN. I think we have made dramatic progress. As I tried to indicate in my opening statement, that is clearly my perception with the perspective I have, having been there over more than the last decade.

And I am very optimistic because of, again, what I said that I saw. At the level of personal behavior, there is an awareness of how to do things right; and a desire to make our effort in Antarctica, which probably centered at McMurdo because it is, as somebody said, "the New York City of Antarctica," where you go to go to all other areas of Antarctica.

We have really focused on that particular region, to make it exemplary. Most of the activities have been cleaning up past insults to the environment; but I do not really see a continuing one, except in the areas that you have mentioned here: The incinerator, which was recently addressed; food waste, which we have addressed I think effectively; and the sewage question, which we are studying and hope we will find a substantial answer to.

Senator KERRY. Are there any projects underway now, or planned down the road, that you believe cannot meet the standards or requirements of the protocol?

Dr. SULLIVAN. There is nothing that has come to my attention that we would refer to as a show stopper. We have a very effective and growing group of individuals, who are addressing the environmental issues. As I mentioned, some of these people spent 20 years in the field with NEPA, and come highly recommended from EPA.

I think we have the right people in place; and it is a matter, frankly, of time and money, to accomplish what we want to accomplish; and we have an incentive to do that. We, NSF and the science community, because the real value of the Antarctic as a natural laboratory has a great deal to do with that environment remaining as free of anthropogenic influence as possible.

Senator KERRY. Is there any kind of impact, negative or positive, of the planning that is required, or the regulatory process that has been put in place, on your ability—not just your ability, but the ability of scientific research—to be put in place on time and in an efficient manner?

Dr. SULLIVAN. I think, to my knowledge, there are none that are proven. I suspect that there are some that have the potential to have a very substantial impact on the work of individual scientists, and on the program at large. The program at large being, I would say, the logistics and the infrastructure that gets scientists to Antarctica and then supports them, and provides for a habitable environment in a rather unforgiving environment.

And as they may be influenced by some provisions of the protocol, that could have—it is sort of a worst-case scenario. We certainly hope that it does not.

Senator KERRY. There is no immediate issue that lies on the table, with respect to that?

Dr. SULLIVAN. In terms of what we are trying to do in science, I think not; and I would hope not.

Senator KERRY. The terms laid out in the protocol are "less than minor or transitory," "minor or transitory," or "more than a minor or transitory impact." Are those clear? Do they need further definition?

Dr. SULLIVAN. I suppose I could say that there is some ambiguity in them in my mind; and it may be a lack of my personal knowledge. But when I have been involved in the discussions, I think these are issues that have some gray and fuzzy areas between them.

Senator KERRY. Are you doing an evaluation of the incineration process on food waste?

Dr. SULLIVAN. That is correct, Mr. Chairman.

Senator KERRY. Is that underway now?

Dr. SULLIVAN. Yes, it is.

Senator KERRY. But not complete?

Dr. SULLIVAN. Yes. It is not complete.

Senator KERRY. Yes, Mr. Scully?

Mr. SCULLY. On the point of "minor and transitory," there is in the environmental impact assessment section of the bill—and this does not clarify, necessarily, all of the ambiguities—but again, because of the need to link our National Environmental Policy Act with the environmental impact assessment procedures of the protocol, there is a section that does refer to the two, to make sure that the "minor or transitory" includes everything that is covered under the "significant" test in NEPA. Now, we think it goes beyond the "significant" test; but to make sure that there are no loopholes.

So, there is an effort to link the two, and to provide for the integration of the two in the legislation itself. And again, this was part of the sort of conceptually challenging task that we faced, in making sure that the two—that NEPA and the protocol—were made consistent in the way we implemented the provisions.

Senator KERRY. I need to review that, but I appreciate your calling that to my attention. Thank you.

Mr. RUDOLPH. Mr. Chairman, may I clarify a point for you? You mentioned the incinerator and our ongoing assessment of food waste disposal.

I would just like to make it clear to you that, our not-yet-completed assessment does include incineration as an alternative—but you should know that incineration is not a preferred alternative; or that it is not our proposed action in that assessment. So, we are looking at, indeed, other alternatives.

Senator KERRY. I understood that and I knew you had that under consideration. I just wondered where it was, and the status of the study because my understanding is that you have suspended incineration of food wastes; is that correct?

Dr. SULLIVAN. That is correct.

Senator KERRY. I will be anxious to see the assessment when it is completed.

Let me leave the record open as to any further questions. We are clearly going to have to sit down and try to work through some of these things, which I hope we can do very easily, and hopefully they will not be that contentious. But I do want to try to see if we can get this moving and get some consensus built up on it, which would be good.

I thank you very much. I do not know if you are staying around for the next panel or not. It might or might not be helpful, depending on how you look at it. I would now like to invite our next group from the private sector, Dr. Louis Lanzerotti, AT&T Bell Laboratories; Mr. Bruce Manheim, the Environmental Defense Fund; Susan Sabella of Greenpeace; and John Splettstoesser, director, International Association of Antarctic Tour Operators.

[Pause.]

Senator KERRY. Thank you for being here. We appreciate your patience.

I do not have any specific order. Why do we not just go in the order that I called you to the table. And if you could stick by the clock, that will give us a little more time for questions.

STATEMENT OF LOUIS J. LANZEROTTI, DISTINGUISHED MEMBER, TECHNICAL STAFF, AT&T BELL LABORATORIES AND CHAIR, COMMITTEE ON ANTARCTIC POLICY AND SCIENCE, POLAR RESEARCH BOARD, NATIONAL RESEARCH COUNCIL

Dr. LANZEROTTI: Thank you, Senator Kerry.

I am Louis Lanzerotti, distinguished member of the technical staff at AT&T Bell Laboratories. I am a geophysicist with active research projects in Antarctica. I would like to point out that my research is supported entirely by the company for which I work, with the exception of the logistics support.

I believe that the implementation of the protocol on environmental protection to the Antarctic treaty is a subject of great importance. From November of last year to July of this year, I chaired the National Research Council's Committee on Antarctic Policy and Science. It was a committee of the Polar Research Board.

The committee's findings and recommendations are contained in its report, which you and your staff have received, Science and Stewardship in the Antarctic. We hope and believe that this report should contribute to Congress' deliberations on this subject.

My detailed statements have been submitted for the record.

The National Research Council committee was composed of 12 members, approximately 6 of whom were scientists with deep Antarctic experience who are also concerned with broader issues of science, science policy, and environmental concerns. Additional members of the committee were individuals having expertise in international and environmental law, and an individual active in the tourism industry.

It was a rather diverse, broad committee, whose members functioned very well together.

The committee was tasked to identify the possible impacts on science from expanding human activities in the Antarctic, to evaluate the possible impacts on science projected from various political, institutional and organizational scenarios being considered for managing these human activities, to provide independent evaluation of possible policy options and their possible effects on the structure and functioning of science—and that was very interesting, because as you might imagine, the scientists in particular, while broad, do not spend their everyday lives on policy matters and to provide specific policy recommendations on the role of the Antarctic scientists in this policy process, both the development and the followon.

Support for the committee's work was provided by the Department of State and the National Research Council. That support, as is the practice of the National Research Council, is basically the travel for the individuals.

The environmental protocol is intended to protect the Antarctic, and establishes the objective of stewardship in the Antarctic treaty system. At the same time, the Antarctic treaty provides, and the environmental protocol specifically recognizes, that the primary purpose of human presence on the continent, as we have heard from Dr. Sullivan and Mr. Scully, is to conduct scientific research. And so U.S. legislation and regulations entailed by implementation of the protocol should reflect these two goals in a balanced and integrated manner.

The committee that I chaired believes that with appropriate implementation, science and stewardship goals in Antarctica can be achieved in a mutually reinforcing, rather than a conflicting, manner. And that certainly was the spirit of our report and the activities that led to the development of the report, including a very large workshop with environmental representatives, Antarctic scientists, legal and other types of scholars on international and environmental matters.

The committee that I chaired concluded that the protocol should be implemented with domestic legislation that provides a flexible and open process for decisionmaking on environmental issues, rather than rigid prescriptions which might ultimately fail to adequately protect the environment and/or to make science so difficult to conduct that the best scientists are discouraged from work in Antarctica.

I might point out that if an objective of this Nation is to conduct science in the Antarctic, then the Nation has called upon its scientists to work there. And it is in the best interest of the Nation to attract the best scientists. So, therefore, it is legitimate for many

Antarctic scientists who have been called by the Nation, in effect, to work in Antarctica to have concerns that the journey through the bureaucracy of required forms and approval hoops not become figuratively more arduous than the journey to the continent itself.

Now, article 3 of the environmental protocol contains substantive principles of stewardship that should be incorporated in the implementing legislation so that the agencies may be directed firmly on their administrative pathways. At the same time, these principles should be viewed as too general to create specific legal requirements for individuals acting in Antarctica in the absence of some process or duty otherwise imposed by the legislation.

Thus, the committee recommended, as a guiding principle, implementing legislation and regulation should provide a process based on appropriate substantive requirements such as those in article 3 of the protocol, rather than a prescription for meeting the requirements of the protocol. The process should be balanced so as to provide flexibility, as well as clarity, for meeting those requirements.

The management of Antarctic science and environmental matters has crucial long-term implications for both stewardship and for the conduct of U.S. research in Antarctica. The assignment of responsibilities for carrying out the new requirements is of great importance as legislation is considered that will guide the United States in implementing this protocol.

The committee that I chaired believes that the National Science Foundation should be kept at the center of Antarctic science and specific governance, while taking greater advantage of the expertise of other agencies in sharing the burden of overall program management. And so we have some specific recommendations with regard to that.

To enhance both the science and stewardship of U.S. activities in the Antarctic, the committee made among its recommendations this four-part recommendation that, first, the existing management relationship between the National Science Foundation and the research community should be essentially unchanged. That is, the current pattern of submittal of proposed research projects, their approval, funding, and oversight, should remain intact, modified only as new scientific and environmental requirements might suggest.

Second, the National Science Foundation should be granted primary rulemaking authority necessary to implement the protocol. However, when that authority involves matters for which other Federal agencies have significant relevant expertise—for example, the Environmental Protection Agency for solid and liquid waste—the concurrence of those agencies must be sought, and the concurrence must be granted in a timely manner, if appropriate, before a regulation is issued for public comment.

The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.

Third, decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the Federal agency that would normally make such decisions in the U.S. For example, the EPA would grant a permit to the NSF for a wastewater treatment facility, and would conduct periodic inspections.

And, fourth, a special group should be established to provide general oversight and review of proposals—for example, (*a*) proposals on the concept, location, design, et cetera, of major U.S. facilities, or significant alterations thereto; (*b*) environmental monitoring activities; and (*c*) National Science Foundation program actions to ensure compliance.

We also noted that from the beginning of the Antarctic treaty system, transparency—that is, openness to the process of public and other interested parties—has been an important component of the Antarctic treaty system of governance. The committee recommended that legislation implementing the protocol should contain opportunities for public involvement similar to those routinely established in domestic environmental and resource management legislation.

We have five additional recommendations that address the need for good science and sound scientific advice at the national and international levels of decisionmaking, need for sound scientific and policy bases in the design of effective monitoring programs—an extremely important need to use resources wisely, the need to minimize unnecessary delays in the conduct of research, and the need for the development of an international scientific assessment of the state of scientific understanding of the environmental problems that may be in the Antarctic.

I want to point out that this minimization of the unnecessary delays is not from the selfish viewpoint of the scientific community, but it takes into account the reality of the conduct of science in the Antarctic and the necessity for continuing to encourage the best science.

In conclusion, the committee strongly supports the implementation of the protocol. It believes it will be of benefit to the Antarctic environment as well as Antarctic science. The committee hopes that the expeditious adoption of implementing legislation in this country and the depositing of the protocol by the executive branch will encourage the acceleration of this process internationally.

And on behalf of the committee on Antarctic Policy and Science and of the National Research Council, I thank you and your committee for the opportunity to be here today.

[The prepared statement of Dr. Lanzerotti follows:]

PREPARED STATEMENT OF DR. LOUIS J. LANZEROTTI

Mr. Chairman and Committee members: I am Louis Lanzerotti, Distinguished Member of the Technical Staff at AT&T Bell Laboratories, and Chairman of the Committee on Antarctic Policy and Science of the National Research Council's Polar Research Board. The National Research Council is pleased to provide testimony to you today on our Committee's report, Science and Stewardship in the Antarctic, which we believe should contribute to Congress' deliberations on implementation of the Environmental Protocol to the Antarctic Treaty. As a geophysicist with active research projects in Antarctica, believe this is a subject of great importance.

The Committee was asked to identify the possible impacts on science from expanding human activities in the Antarctic; to evaluate the possible impacts on science projected from various political, institutional, and organizational scenarios being considered for managing human activities in the Antarctic; to provide an independent evaluation of U.S. policy options and their possible effects on the structure and functioning of science within the Antarctic Treaty System and within the United States; and to provide specific policy recommendations on the role of the antarctic scientist in the policy process. In addition to myself, the Committee consisted of 11 other members having expertise in antarctic science, environmental policy, law, and

tourism. Support for the Committee's effort was provided by the Department of State and the National Research Council.

The Environmental Protocol is intended to protect the antarctic environment and establishes the objective of stewardship in the Antarctic Treaty System. At the same time, the Antarctic Treaty provides, and the Environmental Protocol specifically recognizes, that the primary purpose of human presence on the continent is to conduct scientific research. U.S. legislation and regulations entailed by implementation of the Protocol should reflect these two goals in a balanced, integrated manner. The Committee believes that, with appropriate implementation, science and stewardship goals in Antarctica can be achieved in a mutually reinforcing, rather than conflicting, manner.

The Protocol should be implemented with domestic legislation that provides a flexible, open process for decisionmaking on environmental issues, rather than rigid prescriptions which might ultimately fail to adequately protect the environment or make science so difficult to conduct that the best scientists are discouraged from work in Antarctica. It should be written so that the United States can take a leadership role in the conduct of environmentally sound science on the continent. Putting the goals of the Protocol into action nationally and internationally will require sound understanding of environmental processes and other technical issues. The U.S. representatives and agencies involved should seek the best available scientific advice in the development of effective approaches to environmental matters. The Committee believes the National Science Foundation (NSF) is the best qualified agency to continue leadership and rulemaking for the conduct of antarctic science, but that NSF needs to share its environmental responsibilities for implementing the Protocol and regulating activities with other federal agencies with relevant and significant technical expertise.

The following is a summary of the Committee's key recommendations. Article 3 of the Environmental Protocol contains substantive principles of stewardship that should be incorporated in the implementing legislation so that agencies will be directed firmly on their administrative pathways. At the same time, however, these principles should be seen as too general to create specific legal requirements for individuals acting in Antarctica in absence of some process or duty otherwise imposed by the legislation. The Committee's first recommendation is:

(1) As a guiding principle, implementing legislation and regulations should provide a process based on appropriate substantive requirements, such as those in Article 3 of the Environmental Protocol, rather than a prescription for meeting the requirements of the Protocol. The process should be balanced so as to provide flexibility as well as clarity for meeting requirements.

An important international entity established by the Protocol is the Committee for Environmental Protection (CEP). This Committee, whose precise functions and advisory responsibilities remain to be established, would be composed of members from all nations adhering to the Antarctic Treaty. In view of the significant role that this body will play in antarctic matters, the Committee's second recommendation is:

(2) The United States should encourage the CEP to establish a formal science advisory structure for itself, which would include representatives of all interested parties. The nation should select a representative to the CEP who has both technical and policy credentials, and should establish a national process for providing scientific and environmental advice to the CEP representative.

Monitoring of environmental parameters is certain to increase as a result of implementation of the Protocol. This prospect has raised concerns that not enough attention has yet been paid to the pitfalls inherent in designing effective monitoring programs. Monitoring activities can be too narrow in scope or (and perhaps worse) too broad and misdirected. Such failings are often caused in large part by lack of a sound scientific basis for program design, or a clear focus on important governance issues or both. Therefore, the Committee's third recommendation is:

(3) Monitoring activities—both those under way and additional ones that will be needed to comply fully with the Protocol—should be directed to answer important national and international governance questions, and designed and conducted on the basis of sound scientific information with independent merit review.

Antarctic research is relatively resource-intensive because of the required logistic support (e.g., ships, planes, personnel). Implementation of the Protocol will inevitably bring additional costs for remediation, monitoring, and meeting new requirements for environmental protection that may require more logistic support. The Committee's fourth recommendation is:

(4) Where more efficient operational modes can be identified, they should be implemented quickly and the savings applied to the conduct of science and to meeting the needs of the Protocol.

The management of Antarctic science and environmental matters has crucial long-term implications for both stewardship and the conduct of research on and around the continent. The assignment of responsibilities for carrying out the new requirements is of great importance as legislation is considered that will guide the United States in implementing the Protocol. The Committee believes that the National Science Foundation should be kept at the center of antarctic science and its specific governance, while taking greater advantage of the expertise of other agencies and sharing the burden of overall program management. At the same time, the Committee proposes a process that would subject the major logistical and operational functions of the antarctic program to greater scrutiny. This process should help to ensure that decisions on the national commitment and presence that major operational facilities represent will receive the appropriate level of review and oversight. To enhance both science and stewardship of U.S. activities in the Antarctic, the Committee makes the following recommendations:

(5a) The existing management relationship between the National Science Foundation and the research community should be essentially unchanged. That is, the current pattern of submittal of proposed research projects and their approval, funding, and oversight, should remain intact, modified only as new scientific and environmental requirements might suggest.

(5b) The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other federal agencies have significant and relevant technical expertise (e.g., Environmental Protection Agency for solid and liquid waste), the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identity, to the extent feasible, the specific instances and agencies where this would be the case.

(5c) Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, the Environmental Protection Agency would grant a permit to the National Science Foundation for a wastewater treatment facility and would conduct periodic inspections.

(5d) A special group should be established to provide general oversight and review of:

- proposals on the concept, location, design, etc., of major U.S. facilities, or significant alterations to existing facilities in Antarctica;
- environmental monitoring activities; and
- National Science Foundation program actions to ensure compliance by U.S. personnel (i.e., scientists and others supported by the government) as required by the Protocol and implementing legislation.

Because of a number of factors, including the proposal preparation, submission, and review process and the limited time window for access to the continent, the path for conducting research in Antarctica is long. The Protocol specifies that only those projects requiring a Comprehensive Environmental Evaluation (CEE) must be communicated to the Antarctic Treaty Consultative Parties for consideration at the next Antarctic Treaty Consultative Meeting. For those projects determined to have only a minor or transitory impact (i.e., those projects requiring an Initial Environmental Evaluation (IEE)), the Committee's sixth recommendation is:

(6) Legislation implementing the Protocol should not impose additional delays in the approval of scientific projects determined to have no more than a minor or transitory impact on the antarctic environment.

From the beginning of the Antarctic Treaty System, transparency (i.e., the openness of the process to the public and other interested parties) has been an important component of the system is governance. The Committee, therefore, recommends:

(7) Legislation implementing the Protocol should contain opportunities for public involvement similar to those routinely established in domestic environmental and resource management legislation.

A major challenge for science and for stewardship in the Antarctic as the Protocol is enacted and enabled by the Treaty Parties is to obtain a baseline assessment of the present state of environmental affairs throughout the global region above 60 degrees south latitude. Therefore, the Committee recommends:

(8) The U.S. representative to the Committee for Environmental Protection (CEP) should encourage the CEP to organize and undertake periodically an international scientific assessment of the state of scientific understanding of environmental problems and challenges in the Antarctic.

The Committee's report, Science and Stewardship in the Antarctic, contains detailed discussions of the foundations for each of the above recommendations. In con-

clusion, the Committee strongly believes the implementation of the Protocol will be of benefit to the antarctic environment as well as antarctic science. The Committee hopes that the expeditious adoption of implementing legislation in the United States and depositing of the Protocol by the Executive Branch will encourage the acceleration of this process internationally. On behalf of the Committee on Antarctic Policy and Science and the National Research Council, I thank the Senate Committee on Commerce, Science and Transportation for the invitation to appear here today.

Senator KERRY. Thank you very much, Dr. Lanzerotti. Mr. Manheim.

STATEMENT OF BRUCE S. MANHEIM, JR., SENIOR ATTORNEY AND SCIENTIST, ENVIRONMENTAL DEFENSE FUND

Mr. MANHEIM. Thank you, Mr. Chairman.

I very much appreciate the opportunity to testify today. And, at the outset, I would like to express my appreciation to you, Senator Kerry, for your considerable oversight of Antarctic environmental issues during the past 3 to 4 years.

In fact, I think it was 3 or 4 years ago when Ms. Sabella and I testified before you in your role on the Senate Foreign Relations Committee. And at that time, there was an impasse between many in the environmental community, and even in the scientific community, and the Bush administration over the question of mining in Antarctica. You and your staff played a key role in resolving that impasse, and I hope that you can do the same with respect to the implementing legislation for this new accord.

Rather than reading my testimony into the record, I would ask that it be included, and I would like to address some of the questions and some of the answers that you received to those questions during the questioning of the earlier panel.

I will try to raise those issues in the context or in the order that you raised them. First, you asked about the citizen suit provision and specifically why the administration bill does not contain that provision. My understanding is that, at a minimum, the Environmental Protection Agency, and perhaps other agencies, refused to sign off on any proposal sent up to the Hill that does not include that provision.

And that, at least in part, is based on the recognition that without citizen suit provisions, there will be virtually no enforcement whatsoever of these provisions in the protocol, particularly where the provisions are being followed by other Federal agencies, such as the National Science Foundation.

It is rather ironic that the administration has taken that position, since my organization, not more than several weeks ago, received a letter from the Justice Department extolling the virtues of citizen suit provisions. It indicated that they provide a very valuable public service in the context of the other 16 environmental laws that you mentioned.

We would hope that such a provision is included in this legislation so as to avoid both the unnecessary delay in promulgation of regulations, as well as to ensure that in fact permit applicants are complying with their permits and regulations.

The second issue that you raised, Mr. Chairman, involved the question of weaker safeguards and standards in this implementing proposal from the administration, as opposed to what exists in current U.S. law. I would like to not take the time here, but, rather,

submit for the record at least the interpretation of the Environmental Defense Fund that the Antarctic Conservation Act's provisions regarding taking and incidental taking of species are in fact much stronger than those currently in the protocol.

[See page 85 of the appendix.]

Mr. MANHEIM. I think you are correct, Mr. Chairman, when you point out that standards in both the Clean Air Act and the Clean Water Act go much farther than those currently in the administration proposal governing those subjects. In fact, I do not think that——

Senator KERRY. You heard Mr. Scully's response to that?

Mr. MANHEIM. On the standards? Yes.

Senator KERRY. What is your rebuttal to that?

Mr. MANHEIM. I think what the administration has said previously on both these subjects, as well as the experience that we have seen just over the last couple of years with both these sources of pollution, indicate that there should not be any problem at all.

What I mean by that, Mr. Chairman, is that NSF's representative last year, before the House Merchant Marine and Fisheries Committee, testified that, at a minimum, secondary treatment of sewage is required at least at McMurdo Station. And I can produce that for your record if you like.

Second, with respect to incineration, after the Court of Appeals' decision in *Environmental Defense Fund* v. *Massey*, NSF undertook testing of the emissions coming from those incinerators. Previously, NSF had claimed that these incinerators only produce minimal, not detectable, levels of dioxins. In fact, that emissions testing data show that substantial levels of dioxins are being emitted from the incinerators at concentrations 10 times greater than that permitted for large municipal waste incinerators that are currently subject to EPA regulations.

So, in our view, putting aside the question of what is the right standard, we think incineration should be banned, and we agree with what NSF said last year to Congress, which is that there should be secondary treatment of sewage discharges.

The third issue you raised, Mr. Chairman, involved——

Senator KERRY. What about the physical difficulties of the Antarctic climate, should it be considered in terms of what is feasible?

Mr. MANHEIM. Yes, I think that is a legitimate balancing. But I think, in the end, and perhaps as NSF already recognized last year when they made that statement to Congress, secondary treatment of sewage discharges will outweigh the potential impacts from treatment. In fact, there have been several——

Senator KERRY. Do you have any data supporting that?

Mr. MANHEIM. I do not have data, although I do have several scientific articles which demonstrate that the sewage outfall at McMurdo is actually getting into, at times, the water intake for the station. So, it is not just an environmental problem, as far as impacts on marine life, it is also potentially a human health problem at the station.

The third issue you raised, Mr. Chairman, involved compliance with NEPA. I think your interpretation is absolutely correct; that the provision that the administration has put into its bill is a gaping loophole that this committee should delete.

In fact, NSF, in the *EDF* v. *Massey* case, argued that it should not be subject to NEPA because that would disrupt joint research activities in Antarctica. A unanimous panel of the Court of Appeals rejected that assertion.

Senator KERRY. Was that basically because they truly feared that it is more rigid?

Mr. MANHEIM. No, I think what they are fearful of is judicial review of actions that they undertake in Antarctica. And that is why——

Senator KERRY. What is your take on the environmental standards that are set up under the (2)(c) requirements?

Mr. MANHEIM. I think the protocol's minor or transitory impact standard is a lower threshold for doing a comprehensive document than the significant impact standard in NEPA. But that does not mean that the protocol cannot be implemented through NEPA and the CEQ regulations.

I think it is important to point out that the administration proposal would exempt from judicial review any determination that an operation is undertaken jointly. And I think, in essence, what the administration proposal tries to do is preclude judicial review of actions that the United States might participate in Antarctica with another country.

I will move quickly because of the shortness of time.

Senator KERRY. I have interrupted you a bit, so I will give you a little more time.

Mr. MANHEIM. OK, thank you. As far as vessel compliance goes, I think you made the right point there as well. Annex 5 of the MARPOL convention several years ago, in its implementing legislation—APPS—specifically extends to Government vessels. You know better than I whether the Navy has now come in for an additional extension of time to comply with that prohibition, but there is clearly precedent for applying these provisions to Government vessels, notwithstanding the question of sovereign immunity.

Senator KERRY. Well, why are you so quick to disregard the implications of sovereign immunity?

Mr. MANHEIM. Well, as I understand the sovereign immunity provision, it is only an issue where U.S. Navy ships or Government ships are concerned about other nations having the right to board our vessels in their ports.

Senator KERRY. But that is a concern.

Mr. MANHEIM. It may be a concern elsewhere, but I do not believe that to be a significant concern in Antarctica.

Senator KERRY. No, but that is not what I think they were suggesting. What they were suggesting is that once the principle has changed as to one place, it becomes questionable as to your status in other places. It is a question of the application of the principle around the globe, and if you exempt in one place and begin to vary it, then what is your standing with respect to those countries in other places?

Mr. MANHEIM. Well, if a Government vessel is operating south of 60, to which this implementing legislation would apply, and you waive sovereign immunity, in other words you require Government vessels to comply with what every other private vessel must observe, how does that effect what that vessel is doing elsewhere?

Senator KERRY. I am not sure.

Mr. MANHEIM. I guess I have never quite understood.

Senator KERRY. The issue is perhaps more about precedence, but we are going to look at it.

Mr. MANHEIM. Yes, I have never quite understood that argument either.

Senator KERRY. It may be a barrier argument, but we will have to check it out.

Mr. MANHEIM. As far as agencies go, the next issue raised or questioned was permitting and NSF consultation with EPA. Dr. Lanzerotti's committee concluded that it should be EPA that issues the permit to NSF, not NSF that issues the permit to itself in consultation with the EPA.

As far as residual regulatory authority goes, our view is that the principles in article III—and, again, I do not want to take your time here but I can submit it for the record—are independent, separate, legally binding requirements that should not hinge on the exercise of discretion by different agencies for their implementation.

And finally, as far as tourism goes, our view is that a 2-year study falls short of even what the tourist industry organizations said to Congress last year. They said that a permitting system, a regulatory program would be the appropriate way to deal with the increasing problem of tourist activities in Antarctica. And we see no reason why the implementing legislation should not do that.

Thank you very much.

[The prepared statement of Mr. Manheim follows:]

PREPARED STATEMENT OF BRUCE S. MANHEIM, JR.

Thank you for the opportunity to testily today on implementing legislation for the Protocol on Environmental Protection to the Antarctic Treaty. At the outset, I would like to express my appreciation to the Committee and particularly to Senator Kerry for your considerable oversight of Antarctic environmental issues during the recent past. With passage of the Antarctic Protection Act of 1990 and oversight hearings thereafter, there is no doubt that Congress substantially improved the position of the United States at the international meetings that led to adoption of a new comprehensive environmental agreement for Antarctica. Indeed, as a result of those efforts. the Protocol on Environmental Protection is much more protective of the pristine Antarctic environment than it might otherwise have been. My testimony first describes briefly some of the issues surrounding adoption of the Protocol and then focuses on the most significant problems raised by the administration's recent proposal to implement this new accord.

INTRODUCTION

The Protocol on Environmental Protection to the Antarctic Treaty grew out of a recognition by a number of nations that the existing set of agreements and recommendations governing Antarctica did not afford the continent comprehensive environmental protection. To establish a scheme for such protection, the parties to the Antarctic Treaty set forth in the Protocol legally binding principles applicable to all activities in Antarctica and they prohibited all activities relating to mineral resources, except for scientific research. In addition, the Protocol prescribes detailed rules through a system of annexes on environmental impact assessment (Annex I), conservation of Antarctic fauna and flora (Annex II), waste disposal and waste management (Annex III), prevention of marine pollution (Annex IV), and area protection and management (Annex V). This year, the Senate gave its advice and consent to ratification of the Protocol. However, the Bush Administration decided not to deposit the instrument of ratification and thereby complete the ratification process until implementing legislation is enacted.

During the last Congressional session. implementing legislation for the Protocol proved to be rather controversial because of assertions that it would somehow ad-

versely affect scientific research activities in Antarctica. Unfortunately, those making such claims overlooked the fact that many of the provisions in the Protocol were developed directly from recommendations and reports of the scientific body that advises the Antarctic Treaty parties the Scientific Committee on Antarctic Research ("SCAR"). For example, Annex I of the Protocol sets out environmental impact assessment procedures that are based on recommendations contained in a SCAR report detailing guidelines for evaluating impacts from scientific and logistic activities. Similarly, Annex II's measures on conservation of fauna and flora and Annex V's provisions on protected areas are derived from the "Agreed Measures for Conservation of Antarctic Fauna and Flora," which in turn were based on SCAR recommendations. Moreover, Annex III's provisions governing waste disposal come from SCAR's 1988 report on waste management in Antarctica, which contained a number of recommendations for control of waste in Antarctica.

As SCAR's recommendations and reports make clear, there should be no tension between effective safeguards ensuring protection of the Antarctic environment and scientific research. Indeed, it is clear that protection of the Antarctic environment will ultimately enhance its use as a natural laboratory by scientists. In the past, pollution of the Antarctic environment has interfered with important scientific research taking place there. For example, a close correlation has been found between the presence of contaminants underlying the waters near McMurdo Station and the destruction of scientifically important marine life. Moreover, as the National Science Foundation ("NSF") itself recently reported, uncovered garbage left at its landfill operation at that base "has disrupted the natural predator-prey relationship, making any studies of bird community interactions in their natural states questionable in the vicinity of the station." At the same time, tourist expeditions in Antarctica have interfered with scientific investigations. For instance, the *Bahia Paraiso* oil spill near Palmer Station seriously disrupted studies to determine the ecological effects of ozone depletion and commercial krill harvesting in Antarctica.

During the recent past, it has become increasingly clear that certain operations at U.S. facilities in Antarctica may also pose a risk to the personnel that work there. For example, through the 1980s, NSF discarded wastes at McMurdo Station by bulldozing them into an open refuse pit, dousing them with waste fuel, and igniting them with a flare pistol, even though it was well known that emissions from such open burns (which, at least, in part appear to have fallen out over the station) contain PCB's. And, as NSF subsequently reported, such burn sites contained asbestos, as well. More recently, NSF disclosed that emission levels of dioxins from the incinerator it had decided to utilize to burn certain wastes (in lieu of open pit burns) were substantially higher than the EPA standard for very large municipal waste incinerators operating in the United States. The extent to which these dioxins fell out over McMurdo Station remains unclear, but it must be troubling for those who work at the base. In still other published reports, research groups have demonstrated that untreated sanitary wastes discharged directly into the waters off of McMurdo Station may be reaching the water intake for the base.

THE ADMINISTRATION PROPOSAL

In light of these reports, and the importance of bringing the Protocol's provisions into force for U.S. citizens and others as quickly as possible, the Environmental Defense Fund ("EDF") and other non-governmental organizations (Greenpeace and the Keystone Center) hosted a series of meetings with administration officials beginning in January 1993. Those meetings were designed to resolve the outstanding issues that impeded adoption of implementing legislation for the Protocol last year. Unfortunately, after almost six months of talks, we reached an impasse on a number of important issues. And, today, Mr. Chairman, I must confess to being extremely disappointed with the administration proposal sent to the Committee earlier this week. Indeed, that proposal fails to address many of the problems that have plagued efforts to protect the Antarctic environment during the past decade. At the same time, it proposes to roll back certain provisions in existing law that go beyond the Protocol in protecting Antarctica Moreover, the administration proposal essentially seeks to overturn a recent ruling from the Court of Appeals for the D.C. Circuit finding that the National Environmental Policy Act ("NEPA") applies to U.S. activities in Antarctica. At the same time, in terms of implementing the Protocol, the administration proposal falls short of even those actions called for by two affected constituencies—the U.S. tourist industry and U.S. research scientists. The most important of these problems are described briefly below.

Scope of the Legislation: The administration proposal defines the term "Antarctica" to include the area south of 60 degrees south latitude. That definition contrasts with recently adopted statutes governing actions in Antarctica, which acknowledged

the importance of managing the entire Antarctic ecosystem and extended the scope of U.S. regulation to the relevant activities occurring south of the Antarctic convergence. Yet, while the administration proposal does this for mining, it does not do so for other activities in Antarctica, including tourism and fishing. The latter conclusion is particularly troubling since the Protocol should be implemented so as to encompass fishing expeditions.

Mining Ban: Although a cornerstone of the new Protocol is its prohibition on mining, the administration proposal perpetuates a potentially sweeping loophole in that provision by defining "Antarctic mineral resource activity" to exclude "scientific research." In the past, certain nations have sponsored seismic surveys four off-shore oil and gas resources in Antarctica and identified such efforts as scientific research even though they did not release data from these activities. In recognition of this practice, the Antarctic Protection Act called for an international agreement which ensures that the results of all scientific investigations relating to geological processes and structures are made openly available to the scientific community. Yet, while this agreement appears to have been reached informally, it is not reflected in the administration proposal.

Environmental Impact Assessment: In January 1993, the Court of Appeals for the D.C. Circuit ruled that NEPA applies to NSF's decisions about its projects in Antarctica. Although that litigation involved a challenge to NSF's operation of its incinerator in Antarctica, NSF claimed that even that action would affect its ability to cooperate with other nations in Antarctica. Yet, in reaching its decision, the Court unanimously concluded that NEPA would not threaten research activities undertaken by the U.S. with other nations in Antarctica. Indeed, through the 1970's, NSF prepared two environmental impact statements under NEPA for such joint operations. Nevertheless, the administration now seeks to carve out a gaping loophole by exempting permitting decisions from NEPA compliance and by allowing the Secretary of State to exempt a federal agency from compliance where that agency undertakes an action jointly or in cooperation with a foreign government. The Secretary's decision would not be subject to judicial review.

Comprehensive Pollution Control: With passage of the Antarctic Conservation Act ("ACA") in 1978, Congress directed NSF to establish a comprehensive pollution control program in Antarctica. Although the obligation to develop that program was non-discretionary, NSF took almost 15 years to issue regulations implementing this directive and those regulations fall far short of what the ACA required. The administration proposal would end this mandate to establish comprehensive pollution controls in Antarctica by repealing-the ACA and only requiring operators in Antarctica to comply with the minimal standards governing waste disposal contained in the Protocol.

Incineration: On June 14, 1993, NSF announced that incineration at McMurdo Station in Antarctica would no longer be its proposed action for managing food wastes at that base. That announcement followed the release of NSF data demonstrating that its "state of the art" incinerator releases significant concentrations of dioxins—almost 10 times the concentrations permissible from much larger municipal waste incinerators in the U.S under EPA regulations. NSF had previously contended that its incinerator was in ft1ll compliance with EPA standards and that it did not produce "detectable" levels of dioxins. While this example makes it clear that incineration should be banned in Antarctica, the administration proposal would authorize incineration to go forward on the basis of a decision by NSF.

Sewage Discharges: Last year, NSF officials testified at a Congressional hearing that "there's no question that the primary treatment [of sewage outfall] that is allowed under the Treaty does not suffice * * * [a]nd at least secondary treatment—that is, the removal of all solids—has to be undertaken." Yet, despite that statement, the administration proposal would authorize discharges of untreated sewage directly into Antarctic waters. That provision flies in the face of and is much weaker than Section 403 of the Clean Water Act, which establishes strict criteria and standards governing discharges of such wastes in the marine environment.

Landfills and Leaded Gasoline: As long ago as 1975, the parties to the Antarctic Treaty agreed that the use of leaded fuel in Antarctica should be avoided and they prohibited the burial of wastes at coastal stations there. Since that time, researchers have reported that leaded gasoline in Antarctica may be disrupting studies of pollution on a global scale. Moreover, they have documented the impacts of landfills in Antarctica, including the one that NSF illegally maintained at McMurdo Station for some ten years. Yet, even though alternatives to the use of leaded gasoline and landfills in Antarctica exist and are currently being used by NSF, the administration proposal does not expressly prohibit leaded gasoline and landfilling in Antarctica.

Incidental Take: Currently, under the ACA, NSF may only issue permits authorizing the taking of native mammals or birds to provide specimens for scientific study or for certain educational institutions. However, because of the Bush Administration's insistence during the Protocol negotiations, the Protocol authorizes parties to issue permits for "taking" and "harmful interference" of Antarctic wildlife incidental to scientific activities or construction and operation of support facilities. Unfortunately, the administration proposal now seeks to introduce this potentially sweeping loophole into U.S. law even though it would permit killing of Antarctic wildlife that is presently prohibited under the ACA, Marine Mammal Protection Act, and the Migratory Bird Treaty Act. Moreover, to make matters even worse, the administration proposal would not require compliance with NEPA in connection with this permit decision.

Tourism: During the past ten years, the number of tourists visiting Antarctica has increased dramatically. With that burgeoning industry, the Antarctic environment has been damaged by oil spills, and breeding wildlife are increasingly disturbed by large groups of tourists. Last year, the International Association of Antarctic Tour Operators ("IAATO") testified that it supported creation of a permitting scheme to regulate tourism, stating that "[o]nly in this way can responsible tourism * * * be successful in efforts to minimize impacts on the vulnerable environment of Antarctica." Nevertheless, the administration proposal only calls for a two year study to determine whether measures regulating tourism are necessary and it gives EPA up to two years to issue environmental assessment regulations governing tourist expeditions. In addition. the administration proposal offers no guidance as to precisely how the United States will ensure compliance with the impact assessment requirement.

Review of Foreign Actions: In addition to largely abdicating responsibility for U.S. tourist operations, the administration proposal also fails to incorporate an effective mechanism involving the public in decisions about the adequacy of environmental documents prepared by other nations whose activities affect Antarctica. In fact. the proposal does not even direct an agency to review such proposals and comment on them. Instead, it simply directs EPA to issue regulations coordinating.review of assessments received from other parties. As a result, the new impact assessment process could become a paper exercise since Treaty countries are typically quite resistant to pressing each other on environmental issues. Opening the process to public input and requiring the administration to justify its reluctance to criticize another nation's actions where they are inconsistent with the Protocol or its annexes could facilitate compliance and enforcement.

Principles of Article 3: During negotiation of the Protocol, the Bush Administration successfully persuaded other nations to exempt the legally binding principles contained in Article 3 from the Protocol's compulsory dispute settlement procedures. Now. this administration seeks to weaken further Article 3 by including them as statements of policy and providing relevant agencies with "residual discretionary authority" to implement the principles. This proposal flies in the face of the Protocol's requirements and undercuts an important recommendation of the Committee on Antarctic Policy and Science established under the auspices of the National Academy of Sciences. It stated that the "implementing legislation should recognize and incorporate the environmental principles of the Protocol so that agencies will be directed firmly along their administrative pathways." The administration proposal hardly does this.

Agency Regulatory Responsibilities: Beyond falling short on these substantive issues, the administration proposal is also inadequate in its designation of agency responsibilities for protection of Antarctica. Indeed, with the exception of marine pollution. the proposal largely confers regulatory authority on NSF to implement the Protocol. That decision is quite troubling since NSF (essentially a scientific research institution) does not have as much expertise as EPA or NOAA on environmental matters. Moreover, and just as importantly, NSF is the agency responsible for operation of U.S. bases in Antarctica and will almost certainly be unwilling to draft strict rules and enforce such measures against itself. While the administration may contend that its schemes of consultation and concurrence redress this problem, they clearly do not.

Enforcement: In addition to substantially limiting the role that agencies other than NSF may play in ensuring effective protection of the Antarctic environment, the administration proposal also does not appear to provide such agencies with authority to take enforcement actions against those who violate the Act. Nor do such agencies have unilateral authority to modify or suspend a permit. This is particularly problematic when it comes to NSF, which would undoubtedly refrain from bringing an enforcement action against itself for violating the permit that it issued to itself. The absence of a provision allowing EPA, Coast Guard. and NOAA to bring

enforcement actions against NSF is inconsistent with the Federal Facilities Compliance Act, which authorizes EPA to enforce certain environmental laws against other federal agencies.

Citizen Suits: Finally, although the Justice Department recently touted citizen suit provisions in environmental laws (stating that "a valuable public service is performed when private citizen groups join in the effort to secure compliance with environmental obligations") and the President made a campaign promise to "support legislation that allows ordinary citizens to sue federal agencies that ignore environmental laws," the administration remains divided over including such a provision in its proposal. To date, at least 16 environmental laws contain provisions allowing citizens to bring lawsuits. Like those statutes, the Antarctic implementing legislation should authorize lawsuits allowing citizens to bring actions against those who violate the Act and those who fail to perform non-discretionary duties under it.

CONCLUSION

In sum, Mr. Chairman, EDF is extremely disappointed with the administration's proposal to implement the Protocol on Environmental Protection to the Antarctic Treaty. On the other hand, we believe that S. 1427 offers a better starting point to address many of our concerns. To that end, we would be happy to work with you and other members of the Committee in addressing many of the problems raised by the administration proposal. Once again, thank you for the opportunity to testify today.

Senator KERRY. Thank you very much. We appreciate it. Ms. Sabella.

STATEMENT OF SUSAN SABELLA, GREENPEACE

Ms. SABELLA. Hi. Yes, I am Susan Sabella and I am here this afternoon representing my organization, Greenpeace, as well as the Antarctica Project and Friends of the Earth. We appreciate the opportunity to discuss and present our views on implementing legislation for the Protocol on Environmental Protection to the Antarctic Treaty, and in particular on your bill, the Antarctic Scientific Research, Tourism, and Marine Resources Act.

Greenpeace, the Antarctica Project, and Friends of the Earth joined together in the early 1980's with a common goal of providing Antarctica's near-pristine environment with lasting, strong, and comprehensive protection as a world park. Our chief focus was to defeat the convention on the regulation of Antarctic mineral resource activities and replace that regime with a comprehensive environmental protection agreement and a permanent ban on commercial mining and oil drilling in Antarctica.

As you know, a significant milestone in that campaign was reached on October 4, 1991, when the Antarctic treaty parties adopted the Protocol on Environmental Protection to the Antarctic Treaty. The protocol, which all of our groups support, designates Antarctica a natural reserve devoted to peace and science. It is an effort to update, strengthen, and make legally binding the Antarctic treaty's environmental recommendations, and to extend those recommendations to all visitors to the Antarctic.

In addition to its 50-year mining ban, the protocol establishes a set of overarching environmental principles, creates an advisory committee on environmental protection, and sets forth detailed rules in five annexes on EIA procedures, the protection of native fauna and flora, waste disposal, the prevention of marine pollution, and protected areas. But as you pointed out in your opening remarks, that was 2 years ago. And since then only 5 of the 26 consultative parties needed to ratify the protocol have done so, and none have enacted implementing legislation.

Ratification of the protocol is of paramount importance, and I think it is a goal that is getting lost at times in our own discussions. But until the protocol enters into force, the conduct of human activity in Antarctica will continue to be guided by a patchwork of voluntary and outdated rules. There will be little to compel parties to improve their environmental performance and, in fact, the Antarctic environment will be no more protected than it was before the protocol was adopted. Creating momentum within the Antarctic treaty system toward ratification and entry into force is critical, and ratification by the United States is a key ingredient to creating that momentum.

So, basically I am here today to stress the need for the United States to take a leadership role in making the protocol a reality. Not only does this mean moving forward with legislation expeditiously, but it means enacting a model statute which will demonstrate the importance and value that the United States attaches to the protocol and to protecting the Antarctic environment. And, moreover, which will set the standard for other parties to match.

In this context, the United States must approach legislation not from the perspective of doing the minimum necessary to implement the protocol, but instead from the standpoint of building on the agreement to make it more effective in protecting the Antarctic environment from U.S. activities there. In other words, the protocol should be seen as a floor, not a ceiling. Its annex measures, in particular, should be viewed as minimum standards to be augmented and strengthened.

In addition, the legislation should shape the roles and responsibilities of agencies and departments in such a way that takes advantage of the expertise of those agencies and ensures full compliance with the protocol and the enabling statute by providing for meaningful oversight and enforcement of U.S. activities in Antarctica, including the U.S. Antarctic Program. Furthermore, given the remoteness of Antarctica, it is equally important that the regulatory structure established is transparent and facilitates public participation in the protection and governance of this special region.

The United States has a real opportunity to influence the way in which other parties give effect to the protocol, if it chooses to act promptly and lead by example. In 1990, as the United States began negotiations with the other Antarctic treaty parties on what was to become the protocol, Congress passed the Antarctic Protection Act, setting the stage for those talks and making possible the negotiation of the mining ban. We believe the United States must play as significant a role through ratification, and we believe that your bill, with our proposed changes, can achieve that goal.

We have provided you with written comments and I would be happy to answer any questions.

Senator KERRY. Thank you very much, Ms. Sabella. Mr. Splettstoesser.

STATEMENT OF JOHN SPLETTSTOESSER, DIRECTOR, INTERNATIONAL ASSOCIATION OF ANTARCTIC TOUR OPERATORS

Mr. SPLETTSTOESSER. Thank you, Mr. Chairman. My name is John Splettstoesser. I live in Rockland, ME. Thank you for the op-

portunity to address you today on the subject of tourism as it applies to the recently enacted protocol.

I am a geologist by profession and I spent much of my professional career, in fact, on Antarctic research, having worked there since 1960, beginning as a student, on a variety of research projects when I was associated with a number of major U.S. universities.

But about 10 years ago in 1983 I made my first visit to the Antarctic on a tourist vessel, when I was employed part-time as a naturalist or lecturer on geology, glaciology, and history, and since that time on a part-time basis, when my teaching and other schedules have allowed, I have been on a total of nearly 40 cruises to Antarctica during 8 individual seasons. And, in fact, I am scheduled to be on several more in the next few months.

In 1991 the International Association of Antarctica Tour Operators, or IAATO, was formed, and I have been designed spokesperson by the members since that time, although I am not a full-time member or, rather, employee of any of the companies that conduct tours in the Antarctic. I teach geology at a college in Maine when I am not in the field.

Because many people in this room have been to Antarctica and the rest probably have an interest in it or they would not be here, I will skip the parts of the background statistics and so forth of the continent that is given in my prepared testimony for filing in the record.

So, let's talk a little bit about tourism, which is why I am supposed to be here. It is not really known for certain when tourists first appeared in the Antarctic, but there are a number of documented cases of cruises on South American vessels to the Antarctic peninsula in the late 1950's. In 1969, Lars-Eric Lindblad had the Lindblad *Explorer* built, the first ice-strengthened vessel constructed specifically for tourism in Antarctica and, in fact, polar areas. That ship still sails to Antarctica and I have been a lecturer on her many times in the last 10 years and, in fact, will be on her again in January.

But like science and exploration, the tourism picture in Antarctica has also changed. From a single 95-passenger ship, the *Explorer,* and a handful of visitors, there have lately been as many as 12 tourist vessels and a total of some 6,000 to as many as 7,000 tourists in each of the last 2 years. These numbers are comparable to the total number of all scientists and support staff at all stations and field camps in summer. In fact, those numbers might slightly exceed the numbers of national programs in science.

Is this anything to be concerned about, 10,000 to 15,000 people on a continent larger than the United States and Western Europe combined spread over the 4-month summer? We do not know, and I am not sure if anybody does yet. I should add that the tourism industry, nearly all of which is ship-based, has no shore facilities. There are no stations for tourism in the Antarctic.

And, in fact, the total time the tourists actually spend on the continent, because they are ship-based, in a 4-month summer is less than 1 percent that of all others, all the science programs, in fact, because no tourists sleep on the continent overnight. With one exception, there is an airborne-supported tourism group which flies people to the interior. Last summer they had 127 people involved

in that program. All other tourists, more than 6,000, never spend a night on the continent.

Four years ago, as the tourist numbers continued to show a steady rise, the tour operator companies initiated a code of conduct consisting of self-imposed rules to govern tourist visits to the Antarctic. Although these are not mandatory under law, these consist mainly of fundamental guidelines to protect the fauna and flora and are now an essential requirement of membership in IAATO, formed in 1991 to set competition aside and act as a unified organization to ensure that the industry conducts its operation with the environment first and foremost in mind and on a noninterference basis with national science programs. You will find a copy of that code attached at the end of the printed testimony.

The tour operators' mission is to encourage safe and environmentally responsible private-sector cruises and expeditions to the Antarctic; to ensure that the guidelines and conduct are adhered to by all visitors, not only passengers but also staff and crew; and to foster close cooperation between member companies.

For a little background on IAATO, there are presently 12 member companies of IAATO. Nine are U.S.-based, one is Canadian with a U.S. sales office, and two are German. I would like to add that one of the IAATO objectives, as given in the IAATO bylaws, article 2, section 1, is "to support science in Antarctica through cooperation with Antarctic national programs and to provide logistical support for science." I think the tour operators, as a whole, believe, as well, that Antarctica is a laboratory, is there primarily for science investigations, and tourism in some respects is an aside or an add-on activity.

I would like to next briefly say a few words about some of the content of bill S. 1427, as well as a few aspects of tourism which, in fact, are not in the bill. Some of these were forwarded earlier in the printed testimony.

First of all, we agree with other statements here in today's testimony, the National Science Foundation is the best and most effective agency to continue managing scientific activities in Antarctica. And we look forward to cooperating with them in the future, as well as with other agencies such as Commerce, assuming this bill might be effected.

The tour operator companies now under the umbrella of IAATO have had very good relations with NSF in the past, and we recommend that Commerce or any other agency involved with responsibilities of regulating tourism include representatives from the tour industry on any pertinent committees or working groups in an advisory capacity. Our collective experience of decades in the Antarctic would be mutually beneficial, as it would in a capacity on the committee for environmental protection. Article 11 of the environmental protocol provides for the appointment of a representative who may be accompanied by experts and advisors. We might be considered experts on tourism because that, in fact, is the business of tour operators.

We also have not really a problem, but we would like to see a bit more clarification when it comes to putting the ratification into legal terms. The definitions of things like "minor transitory impact" and "dependent and associated ecosystems," as given in the proto-

col, article VIII and annex 1, we believe those, obviously, would affect not only science activities, proposed ones, and applications for permits, but for tourism as well. And if you reflect back on my comments about how much time tourists actually spend on the continent and never spend an overnight there, one of those terms, "minor transitory impact," would seem to apply to tourism.

As far as regulations go, we believe the code of conduct or guidelines that have been in effect by tour operators for some years actually constitute more than what the protocol and your bill provide for, and we will continue to conduct operations with those standards in the future.

There are a number of other points I would like to cover, but let me summarize briefly since the red light is on and the bell went off. We have some concerns, and I will list seven very quickly without elaborating.

We are concerned about the types of vessels that go to the Antarctic, as well as your committee is concerned. For example, in the tour industry there are things like ice-strengthened ships, nonice-strengthened ships, icebreakers, private yachts, little ships that have a 38-passenger capacity, big ships that can hold as many as 800. But by mutual agreement within the industry, we will not carry more than 400 to the Antarctic, and so on and so on.

No. 2, there are some tour operators that are not members of our organization, which concern us very much. We do have an outreach to try to at least inform them of what the rules are. We do have concerns about possible overvisitation of sites, that is No. 3.

No. 4, we are concerned about emergency response or contingency plans in the case of something like, let's say, a vessel grounding or that sort of thing, and we have taken steps to alleviate that kind of concern in the future.

We also have concerns about citizen suits. We do not mind citizen suits. We think they are a way of life and can deal with them because if people keep their noses straight they should stay out of trouble, whether it is citizen suit or otherwise.

No. 6, liability. All tour operators carry insurance, obviously, and we believe insurance policies would cover any kinds of liability and for correcting and cleaning up any potential disasters.

And finally, a tourism annex, I think it goes without speaking that nobody wants to be overregulated, and the tourism industry sees no need for a tourism annex for nongovernmental activities, which includes tourism.

That concludes my formal presentation. I am pleased to respond to questions. Thank you.

[The prepared statement of Mr. Splettstoesser follows:]

PREPARED STATEMENT OF JOHN SPLETTSTOESSER

Thank you for the opportunity to address you today on the subject of tourism as it applies to the recently enacted Protocol on Environmental Protection to the Antarctic Treaty. I was a member of the U.S. Delegation at the With Antarctic Treaty Consultative Meeting in Bonn, Germany, in October 1991, at which the Protocol was discussed, as well as at the Workshop on Tourism, which preceded the XVIIth Consultative Meeting in Venice, Italy, in November 1992. I am a geologist by profession, and have spent much of my professional career on Antarctic research, having worked there a total of eight summer seasons, beginning in 1960, on a variety of research projects when I was associated with major U.S. universities. Beginning in 1983 I made my first visit to Antarctica on a tourist vessel, employed as a naturalist

and/or lecturer on geology, glaciology, and history. On a part-time basis, and when my teaching and other schedules have allowed, I have been on a total of 37 cruises to Antarctica during 8 austral summers. Since the International Association of Antarctica Tour Operators (IAATO) was formed in 1991, I have been designated Spokesperson by the members. I want to acknowledge the support and input from the tour operators for the content of today's testimony, and particularly Ms. Victoria Underwood. Ms. Melissa Folks, Secretariat of the IAATO office, also deserves special recognition.

INTRODUCTION

Before I go on to address the parts of the proposed Bill that relate to the views of the tourism industry, I would like to cover a brief background of Antarctica for those who are unfamiliar with the southernmost continent. Geographically, Antarctica is centered around the South Pole, and is surrounded by ocean, whereas in the Arctic, there is a deep ocean at the North Pole surrounded by landmasses, all of which are inhabited. Antarctica has no indigenous population, and apparently never has had any. You might say there is no anthropology connected with Antarctica, at least not yet. In size, Antarctica is about the size of the United States plus Mexico. It is also the coldest continent, with a record low temperature in July 1983 of -1290F (or —89 degrees C), at the Russian base, Vostok. It is nearly covered with a large ice sheet, or glacier, with measured thicknesses of nearly 4,800 meters, or about 15,500 feet. Only about 1 to 2 percent is exposed bedrock (which in fact has provided opportunity for geologists to work there). My work as a geologist has taken me to most parts of what is called West Antarctica, and as a naturalist and/or lecturer on tourist vessels, to nearly all the rest of the coastline of the continent.

PERIOD OF EXPLORATION

Antarctica, the continent, was first sighted in 1820, a time of exploitation and seal hunting. By 1830, fur seals were commercially extinct. James Eights, a geologist from Albany, New York, became the first U.S. scientist to work in Antarctica, in 1829-30. He was the first to discover and report on fossils in Antarctica, and made other significant discoveries in biology. By the end of the 1800's, two expeditions had overwintered in Antarctica, one on a ship, in 1897, and the other on the continent itself in 1899. I was at the camp of the latter overwintering expedition earlier this year, at Cape Adare, where members of a British expedition lived in two wooden buildings that are still there, preserved by the dryness of Antarctica's climate. Some of the expedition names of this period might not be familiar to some of you, but include Gerlach, Borchgrevink, Nordenskjold (a Swedish geologist), Henryk Arctowski (a Polish geologist), but also Roald Amundsen and Dr. Frederick Cook, the American physician who claimed a few years later that he first climbed Mt. McKinley, and was the first to reach the North Pole, before Robert Peary.

THE HEROIC ERA

The beginning of the current century marked a time of heroic exploration, and also scientific research. Captain Robert Scott had geologists and others on his two expeditions, in 1901 and 1911. Scott's party of 5 reached the South Pole on January 17, 1912, only to find that Amundsen's party had preceded him by 33 days. Admiral Byrd launched major expeditions in Antarctica, in 1929, 1933, and 1939, discovering more land than anyone before him. He was the first to fly an airplane to the South Pole in November 1929, and the first to realize the airplane's potential for exploration, mapping and photography. Douglas Mawson, the Australian geologist, was among the first to reach the South Magnetic Pole, and to climb Mt. Erebus, the 12,400-foot active volcano just 20 miles from the U.S. station of McMurdo.

A CONTINENT FOR SCIENCE

The period we are now in in Antarctica can be described as one of science, science, and more science. The International Geophysical Year, in 1957-58, marked a continent-wide effort by 12 nations to study the laboratory known as Antarctica, and the program continues to this day, but now with even more international involvement. An Antarctic Treaty was written in 1959, and ratified in 1961, as a means of ensuring harmonious conduct of all research activities, freedom of access to all parts of Antarctica, a ban on military activities and nuclear testing, and an inspection system to assure compliance with the objectives of the Treaty. The Treaty has increased its membership in its 32-year history, and it still works very well. Many of its amendments have pertained to lessening environmental impacts and protection of the unique wildlife.

Antarctica has changed in the last 35 years. My first job there, as a geology student assistant in 1960, was in a field mapping project in a good-sized mountain

range discovered only the year before. The next year, in 1961-62, I was one of a 4-man party in the Ellsworth Mountains, first seen by Lincoln Ellsworth on his historic flight across the continent in 1935. (I was two years old at that time, and I regret that the event went unnoticed.) Our group was the first to set foot there, 26 years later.

It is no longer possible to discover mountain ranges or new terrain. Has everything been discovered in, or about, Antarctica? I doubt it. But I'm not here to talk about things like the "discovery" of the ozone hole, or global warming, or natural antifreeze in fish, or Gondwanaland, all of which are major current topics of study in Antarctica.

TOURISM

Let's talk a little about tourism. It is not known for certain when tourists first visited Antarctica, but there are several documented instances of cruises on South American vessels to the Antarctic Peninsula in the late 1950's. By 1969, Lars-Eric Lindblad had the Lindblad Explorer built, the first ice strengthened vessel constructed specifically for tourism in polar areas. The ship still sails to Antarctica, and I have been a lecturer on her many times in the last 10 years. But, like science and exploration, the tourism picture in Antarctica has also changed. From a single 95-passenger ship, the Explorer and a handful of visitors, there have lately been as many as 12 tourist vessels and a total of some 6,500 tourists in each of the last two seasons. The numbers are comparable to the total number of all scientists and support staff at all stations and field camps in summer. Is this anything to be concerned about, 10,000 to 15,000 people on a continent larger than the U.S. and western Europe combined, spread over a 4-month period? I should add that the tourism industry, nearly all of which is ship-based, has no shore facilities, and the total time that tourists actually spend on and in Antarctica in a 4-month summer is less than 1 percent of that of all others.

Nevertheless, any human presence in Antarctica has the potential for a negative impact, especially when one looks at the sites where people live and visit. With a few exceptions, all research stations are on ice-free rocky areas and that's where most of the wildlife is, or was. This conflict of territorial "rights" can have negative effects if not managed properly.

Four years ago, as the tourist numbers continued to show a steady rise, the tour operator companies initiated a "Code of Conduct," consisting of self-imposed rules to govern tourist visits to Antarctica. These consist mainly of fundamental guidelines to protect the fauna and flora, and are now an essential requirement of membership in the International Association of Antarctica Tour Operators, or IAATO, formed in 1991 to set competition aside and act as a unified organization to ensure that the tourism industry conducts its operations with the environment first and foremost in mind, and on a non4nterference basis with national science programs.

For further background on the tour operators organization (IAATO), Guidelines for Visitors, a brief history of tourism in Antarctica, and a summary table of ships and passenger numbers from the 1992-93 season, a chapter on this subject will be included along with others in a book entitled ANTARCTIC TOURISM to be published in early 1994 by Pergamon Press as a Special Issue of Annals of Tourism Research.

IAATO

IAATO's mission is to encourage safe and environmentally responsible private-sector cruises and expeditions to Antarctica, to ensure that the guidelines of conduct are adhered to by all visitors (passengers, staff and crew), and to foster close cooperation between member companies. There are presently 12 member companies of IAATO—9 are U.S.-based, 1 is Canadian (with a U.S. sales office), and 2 are German. Eleven companies operate only ship-based tourism, and the twelfth conducts airborne tourism. A list of member companies and addresses follows this text.

During the 1992-93 austral summer season, tourism to the continent was carried out by the widest range of vessels used to date, including private yachts, ice-strengthened expedition ships, non-strengthened cruise ships, and icebreakers. Airborne tourism has only slightly added to the total counts of tourists—more than 90 percent of tourists have visited Antarctica by ship. Although tourism has grown from year to year, especially since 1986, in the 35 years since tourists first visited Antarctica, the cumulative total number is still less than the number of tourists who have—in one year—visited the Galapagos Islands, considered to be one of the most fragile and sensitive ecosystems in the world.

Since Antarctic tourism began in the late 1950's, the track-record of the tourism industry is a very good one and we intend to continue that way. Tourism activities

have been conducted responsibly and impacts have been negligible. The Guidelines are reviewed annually and updated as necessary in order to remain current. (Note that IAATO will update the Guidelines, if necessary, once legislation is enacted.) IAATO members educate their travelers through an on-board educational program led by experts who have a wealth of experience in various disciplines of Antarctic research. Not only are travelers informed about their responsibilities under the Antarctic Conservation Act and what constitutes responsible behavior ashore in order to avoid impacting flora, fauna and science, but they are also guided ashore in order to further minimize any adverse impact. Visits to research stations are requested in advance and reconfirmed at least 72 hours prior to arrival. Entry to protected areas is avoided.

Since 1989, U.S.-based tour companies have coordinated their activities with the National Science Foundation as manager of the U.S. Antarctic Program (USAP) and as the agency responsible for the implementation of the Antarctic Conservation Act. We have received excellent guidance and support from the NSF's Office of Polar Programs and believe the NSF deserves full credit for their role in cooperative government. IAATO members have welcomed USAP Environmental Observers on board our vessels and will continue to do so during the 1993-94 season. The purpose of these observers is to "monitor, by on-site observations, compliance with the Antarctic Treaty and the U.S. Antarctic Conservation Act, as such activities relate to personal conduct in Antarctica". We look forward to working with the NSF in the future to continue to ensure that our operations minimize impact to the environment and do not interfere with on-going science carried out by the USAP and other national science programs. In 1993 the tour operators were contacted by the Council of Managers of National Antarctic Programs (or COMNAP) in efforts to inventory the amounts of petroleum fuel and oil products being carried by vessels during the past 1992-93 season m the Antarctic Treaty area, as part of a Treaty-wide means of maintaining an inventory of fuels in Antarctica. In addition, COMNAP has expressed an interest in acting as a clearinghouse for statistics on tour ship traffic and passenger numbers on an annual basis. IAATO members look forward to cooperating with COMNAP now and in the future.

It should be considered that commercial fishing activities and tourism are the two largest private-sector industries in Antarctica and have been for many years. For some IAATO members, the business generated from their operations in Antarctica represents the largest share of revenue produced during the entire year—and there is even one company who concentrates solely on Antarctic tourism. Because of our vested interest in Antarctica, IAATO members are keenly interested in the Environmental Protocol and in implementing legislation put forth to "ratify" the Protocol. We are indeed motivated by self-interest and public spirit, however no one knows better than we that if we do not protect the Antarctic environment today, we will not be conducting tourism to Antarctica in the future.

1 also want to say that if you have not yet been to Antarctica, take the time to do so and marvel at a unique part of the world, where wildlife is in great abundance, but in relatively few species. Animals breed on the scant ice-free coastal areas without fear of humans. The wildness of the terrain and the incredible scenery are found nowhere else on Earth. In this world of ice, there is beauty, but also respect for what is there. I am sincere when I say that by going to Antarctica, one automatically becomes an environmentalist, with a vow to keep it in its pristine state. Antarctica does that to you.

COMMENTS ON S. 1427

Overall, the proposed Bill of this Committee is well written and appears to apply the intended objectives of the "1991 Protocol on Environmental Protection to the Antarctic Treaty" very well. Speaking for tour operators, there are several comments offered regarding specific mention and relevance to tourism as they occur in S. 1427.

1. Sec. 2. FINDINGS p. 3, par. (7). We agree that the National Science Foundation is the best and most effective Agency to continue managing scientific activities in Antarctica, and look forward to cooperating with another Agency, such as Commerce. The tour operator companies, now under the umbrella of IAATO, have had very good relations with NSF in the past, and recommend that Commerce or any other Agency involved with the responsibilities of regulating tourism in Antarctica include representatives from the tourism industry on any pertinent committees or working groups m an advisory capacity. Our collective experience of decades in Antarctica would be mutually beneficial.

2. Sec. 4. REPRESENTATIVE ARBITRATORS AND INSPECTORS p. 5, par. (a)(1). Similar to the previous recommendation, we believe that representation from

the tourism industry would be mutually beneficial in an advisory capacity on the committee for Environmental Protection. Article 11 of the Environmental Protocol provides for the appointment of "a representative who may be accompanied by experts and advisers."

3. Sec. 5. UNLAWFUL ACTIVITIES p. 6, par. (3). I would like to point out in the context of "an authorized officer * * * " boarding a vessel "for the purpose of conducting any search or inspection * * * ", that in the 1992-93 austral summer season in Antarctica there was an instance of a vessel from the United Kingdom requesting permission to board and inspect tour vessels in Antarctica. Such requests were welcomed and full cooperation was given by the tour staff. In addition, although no formal inspections have been involved, the Observer Program mentioned earlier that the National Science Foundation initiated several years ago has been conducted very successfully, and is a primary means of reporting on environmental procedures followed by the tour companies. The tour operators endorse an Observer Program and Inspection Program as a means of satisfying compliance requirements of the Environmental Protocol.

4. Sec. 6. PERMITS AND OTHER REGULATORY CONTROLS, p. 7, par. (a)(1). The permit procedure required by the terms of the Environmental Protocol represents a major step as far as access to Antarctica and conducting any type of activity there are concerned. We also concur that permitting is a logical and reasonable means of ensuring that the fauna and flora will not be affected or damaged. We acknowledge the drafters of the Environmental Protocol for their foresight in providing more rigorous requirements for any human activity in Antarctica, thus avoiding major environmental mishap before it might occur, rather than after the event, as has happened in other cases elsewhere in the world. We look forward to cooperating with Commerce or other agencies in this regard, and recommend once again, that the tour industry be consulted by representation on any pertinent committees, working groups, or review procedures for permitting. We also appreciate advance notification of details such as length of permit term, language of permits, fees, if required and amount, and other relevant information, preferably well in advance of an operating field season. Tour operators normally plan schedules and itineraries a year or more m advance, and the more lead time provided to the operators the better for all concerned. We notice that statements covering the period during which the permit is valid and other terms and conditions are included in Sec. 6(e) Terms and Conditions of Permits, p. 11.

As the language content for permits and other details is worked out after enactment of Protocol ratification, there are a few measures such as definitions that require some clarification; for example, with regard to tourism, and for any other activities, definitions such as "minor or transitory impact" and "dependent and associated ecosystems," as given in the Environmental Protocol, Article 8 and Annex I. These terms will most likely appear on legislation and/or regulations, and therefore it is necessary that the terms be defined for commonality of interpretation by the various users of Antarctica-scientists, agencies supporting science, and the non-governmental organizations, which includes tour operators. Since tourism is nearly all ship-based, tourists' time on land is less than 1 percent of that of all others in Antarctica, and a "minor or transitory impact" would appear to apply in cases where strict Guidelines of Conduct are enforced ashore, for both tour operators and passengers.

5. Sec. 6. PERMITS (continued) * * * , p. 13, par. (i)(B). With reference to "* * * discharges into the sea in Antarctica after January 1, 1995 * * *", we see this, among other changes to operational procedures of ships in Antarctica, as a responsibility of IAATO as an organization to inform its member companies of all pertinent regulations as they arise.

Our responsibilities would also apply to a later paragraph in the Bill, p. 33, Sec. 15. AMENDMENTS * * * , par. (c)(2), which would prohibit introduction of a dog or any other nonindigenous animal or plant into the area south of 60 degrees south latitude. IAATO members would see that their ships traveling to Antarctica would not include any of this material.

6. Sec. 7. ENVIRONMENTAL ASSESSMENT OF ACTIVITIES WITHIN ANTARCTICA p. 15, par. (b) Tourism and Other Nongovernmental Activities. As pointed out earlier, here is another case where representation from the tourism industry is recommended in an advisory capacity on any committees that relate to "regulations establishing procedures for the environmental assessment of tourism and other nongovernmental activities * * *."

7. Sec. 7. ENVIRONMENTAL (continued) * * * , p. 16, par. (c). The Review periods mentioned are critical for tour operators, inasmuch as sufficient lead time is required to plan for a season, print brochures, market for passengers, arrange for port requirements, etc., etc. We see no problem presently in the terms of the Review sec-

tion of this Bill, but anticipate that the first trial at implementing the new regulations might involve delays. We will cooperate in every way in efforts to expedite the entire permitting procedure.

8. Sec. 8. MONITORING INSPECTIONS PLANS REPORTS p. 17, par. (a) Monitoring. We endorse the monitoring and observer program that the National Science Foundation has conducted in the last few years, and welcome a continuation of that or its equivalent.

9. Sec. 8. MONITORING (continued) * * *, p. 17, par. (c) Land-Based Contingency Plans. Tour operators are presently investigating various means of providing for contingency plans in the event of incidents or emergency situations. Contingency plans are also included in this Bill on p. 36, Sec. 16 AMENDMENTS TO THE ACT TO PREVENT POLLUTION FROM SHIPS par. (e)(2), which would amend an existing U.S. Act. As I mentioned earlier, virtually all tourism conducted in Antarctica is ship-based, without shore facilities, although one IAATO member conducts operations in the interior by means of a flying service and a temporary summer camp. Contingency plans in that regard have been in place since the operation began in 1987, with backup aircraft and search-and-rescue procedures an integral part of the activity. About 1 to 2 percent of all tourism conducted in Antarctica pertains to this operation.

10. Sec. 9. REGULATIONS p. 18, par. (b)Schedule for Regulations. As specified in this Paragraph—i.e., the regulations being promulgated within two years after the date of enactment of S. 1427—we believe that this provides adequate time to prepare for any and all requirements for tour operators, as well as the development of required regulations. I would like to add that the tour operators have for some years been observing regulations that constitute more than what the Environmental Protocol, and this Bill, provides for, and will continue to conduct operations in Antarctica with the highest environmental standards that are feasible. The self-imposed Guidelines for Visitors is an example, as well as all requirements for ships at sea.

To require compliance of the Protocol before all Treaty Parties ratify it would not be consistent with Article 23 (Entry Into Force) of the Protocol. Furthermore, it would be discriminatory to U.S. Citizens, as well as the U. 5.-based tourism industry because other countries not affected by an early and "unofficial" effective date of the Protocol might operate under different rules.

If all Treaty Parties and their citizens do not operate under all terms of the Protocol equally, and on the same timetable, the Antarctic Treaty System loses much of its original intent. Artide 23 clearly provides a time-table for its ratification, namely, (and I quote) "This Protocol shall enter into force on the thirtieth day following the date of deposit of instruments of ratification, acceptance, approval or accession by all States which are Antarctic Treaty Consultative Parties at the date on which this Protocol is adopted." (End quote.) With regard to the tourism industry, it is possible that inequitable dates of "Entry Into Force" would put U.S.-based tour companies at an extreme disadvantage to foreign countries and could feasibly result in a transfer of U.S.-based offices and operators to other countries, thereby not only involving a loss of jobs and a disruption of U.S.-based tourism economy, but placing Antarctic tourism under the purview of countries not taking such a responsible environmental stance that the U.S. has. Legal obligations that are too restrictive may indeed outweigh the advantages sought—which certainly does not seem to be the intent of the enabling legislation. It is our belief that the policy of the U.S. should not prejudice private industry, whether it be within the boundaries of the U.S. or in Antarctica.

Il. Sec. 18. RELATION TO EXISTING TREATIES STATUTES REGULATIONS AND PERMITS p. 40, par. (b) Repeal of Antarctic Conservation Act of 1978. Until now the Antarctic Conservation Act of 1978 has been a key ingredient of the IAATO Guidelines for Visitors and Tour Operators, and in fact adherence to its terms has been a requirement for membership in IAATO. Obviously, IAATO will now substitute relevant Protocol language and specifics according to this Bill (5.1427) or any other that ratifies the Protocol.

SUMMARY

That concludes my statements with regard to specific paragraphs of S. 1427, but I would like to summarize briefly the salient points that tour operators can best respond to and assist with in the implementation of the Bill. We recognize that the Protocol took great effort to become a formal document of the Antarctic Treaty, and it will be here for a long time. We also recognize that the terms of the Protocol, and its implementing legislation by each Treaty Party, applies to all human activity in Antarctica, whether a national science program, tourism, or any person, without discrimination. We also believe that a wealth of experience in Antarctica has great value, and stress that tourism industry experience can be mutually beneficial in an

advisory capacity on any relevant committees, working groups, or review boards that result from passage of this Bill. We volunteer our representation in whatever manner the responsible Agencies might designate.

We also understand that passage of a U.S. Bill applies to the U.S. Antarctic Program, and to U.S. Citizens, whereas the tourism industry consists of a multitude of ship registries and citizenships. One of the major objectives of IAATO is to apply the content of the Antarctic Protocol and U.S. implementing legislation to all activities of the tourism industry, so that no one individual or ship operator is immune from regulations. Tour operators have the means of doing this by contractual arrangements with the ship operators and crews as well as with Contracts of Carriage with the passengers. Nearly all operators in Antarctica in the coming 1993-94 summer season are members of IAATO, and we expect that the others will be joining soon or not returning to Antarctica in the future. Membership in IAATO requires adherence to existing Guidelines and Treaty regulations, and this continues in the future after ratification of the Protocol. Tour operators, as a governing body, recognize the responsibility of keeping their own house in order as a means of survival in the business world, in addition to a responsibility of maintaining an environmentally safe planet.

GUIDELINES OF CONDUCT FOR ANTARCTICA VISITORS

Antarctica, the world's last pristine wilderness, is particularly vulnerable to human presence. Life in Antarctica must contend with one of the harshest environments on earth, and we must take care that our presence does not add more stress to this fragile and unique ecosystem.

The following Guidelines of Conduct have been adopted by all members of the International Association of Antarctica Tour Operators (IAATO) and will be made available to all visitors traveling with them to Antarctica. With your cooperation we will be able to operate environmentally-conscious expeditions that protect and preserve Antarctica, leaving the continent unimpaired for future generations.

Please thoroughly study and follow these guidelines. By doing so, you will make an important contribution towards the conservation of the Antarctic ecosystem and minimize visitor impact. It will also help to insure that you will have a safe and fulfilling experience in visiting one of the most exciting and fascinating places on earth.

DO NOT DISTURB, HARASS, OR INTERFERE WITH THE WILDLIFE

- never touch the animals.
- maintain a distance of at least 15 feet (4.5 meters) from penguins, all nesting birds and true seals (crawling seals), and 50 feet (15 meters) from fur seals.
- give animals the right-of-way.
- do not position yourself between a marine animal and its path to the water, nor between a parent and its young.
- always be aware of your surroundings; stay outside the periphery of bird rookeries and seal colonies.
- keep noise to a minimum.
- do not feed the animals, either ashore or from the ship.

Most of the Antarctic species exhibit a lack of fear which allows you to approach relatively close; however, please remember that the austral summer is a time for courting, mating, nesting, rearing young and molting. If any animal changes or stops its activities upon your approach, you are too close! Be especially careful while taking photographs, since it is easy to not notice adverse reactions of animals when concentrating through the lens of a camera. Disturbing nesting birds may cause them to expose their eggs/offspring to predators or cold. Maintain a low profile since animals can be intimidated by people standing over them. The disturbance of some animals, most notably fur seals and nesting skuas, may elicit an aggressive, and even dangerous, response.

DO NOT WALK ON OR OTHERWISE DAMAGE THE FRAGILE PLANTS, I.E. LICHENS, MOSSES AND GRASSES

Poor soil and harsh living conditions mean growth and regeneration of these plants is extremely slow. Most of the lichens, which grow only on rocks, hard-packed sand and gravel, and bones, are extremely fragile. Damage from human activity among the moss beds can last for decades.

LEAVE NOTHING BEHIND, AND TAKE ONLY MEMORIES AND PHOTOGRAPHS

- leave no litter ashore (and remove any litter you may find while ashore); dispose of all litter properly.
- do not take souvenirs, including whale and seal bones, live or dead animals, rocks, fossils, plants, other organic material, or anything which may be of historical or scientific value.

DO NOT INTERFERE WITH PROTECTED AREAS OR SCIENTIFIC RESEARCH

- do not enter buildings at the research stations unless invited to do so.
- avoid entering all officially protected areas, and do not disturb any ongoing scientific studies.

Areas of special scientific concern are clearly delineated by markers and/or described in official records (the expedition staff know these sites). Scientific research in Antarctica is in the interest of everyone * * * visitors, scientists, and laymen.

HISTORIC HUTS MAY ONLY BE ENTERED WHEN ACCOMPANIED BY A PROPERLY AUTHORIZED ESCORT

- nothing may be removed from or disturbed within historic huts.

Historic huts are essentially museums, and they are all officially maintained and monitored by various governments.

DO NOT SMOKE DURING SHORE EXCURSIONS

Fire is a very serious hazard in the dry climate of Antarctica. Great care must be taken to safeguard against this danger, particularly around wildlife areas, historic huts, research buildings, and storage facilities.

STAY WITH YOUR GROUP OR WITH ONE OF THE SHIP'S LEADERS WHEN ASHORE

- follow the directions of the expedition staff.
- never wander off alone or out of sight of others.
- do not hike onto glaciers or large snow fields, as there is a real danger of falling into hidden crevasses.

In addition to the Guidelines of Conduct for Antarctica Visitors adopted by IAATO, all visitors should be aware of the Agreed Measures for the Conservation of Antarctic Fauna and Flora. This annex to the Antarctic Treaty of 1959 addresses the protection of the environment and conservation of wildlife. Citizens of any government that has ratified the Antarctic Treaty are legally bound by the following guidelines of conduct in the region south of Latitude 60 degrees South:

CONSERVATION OF WILDLIFE

Animals and plants native to Antarctica are protected under the following five instruments outlined in the Agreed Measures:

1. *Protection of Native Fauna.*—Within the Treaty Area it is prohibited to kill, wound, capture or molest any native mammal or bird, or any attempt at such an act, except in accordance with a permit.

2. *Harmful Interference.*—Appropriate efforts will be taken to ensure that harmful interference is minimized in order that normal living conditions of any native mammal or bird are protected. Harmful interference includes any disturbance of bird and seal colonies during the breeding period by persistent attention from persons on foot.

3.*Specially Protected Species.*—Special protection is accorded to Fur and Ross Seals.

4. *Specially Protected Areas (SPAs).*—Areas of outstanding scientific interest are preserved in order to protect their unique natural ecological system. Entry to these areas is allowed by permit only.

5. *Introduction of Non-Indigenous Species, Parasites and Diseases.*—No species of animal or plant not indigenous to the Antarctic Treaty Area may be brought into the Area, except in accordance with a permit. All reasonable precautions have to be taken to prevent the accidental introduction of parasites and diseases into the Treaty Area.

Additionally, the Marine Mammal Protection Act of 1972 prohibits U.S. citizens from taking or importing marine mammals, or parts of marine mammals, into the U.S. Both accidental or deliberate disturbance of seals or whales may constitute harassment under the Act.

Further, the Antarctic Conservation Act of 1978 (U.S. Public Law 95-541) was adopted by the United States Congress to protect and preserve the ecosystem, flora

and fauna of the continent, and to implement the Agreed Measures for the Conservation of Antarctic Fauna and Flora. The Act sets forth regulations which are legally binding for U.S. citizens and residents visiting Antarctica.

Briefly, the Act provides the following:

In Antarctica the Act makes it unlawful, unless authorized by regulation or permit issued under this Act, to take native animals or birds, to collect any special native plant, to introduce species, to enter certain special areas (SPAs), or to discharge or dispose of any pollutants. To "take" means to remove, harass, molest, harm, pursue, hunt, shoot, wound, kill, trap, capture, restrain, or tag any native mammal or native bird, or to attempt to engage in such conduct.

Under the Act, violations are subject to civil penalties, including a fine of up to $10,000 and one year imprisonment for each violation. The complete text of the Antarctic Conservation Act of 1978 can be found in the ship's library.

Our ship's staff will make certain that the Antarctic Conservation Act and the above guidelines are adhered to.

By encouraging your fellow expeditioners to follow your environmentally-conscious efforts you will help us to ensure that Antarctica will remain pristine for the enjoyment of future generations. Thank you in advance for your cooperation.

GUIDELINES OF CONDUCT FOR ANTARCTICA TOUR OPERATORS

1. Thoroughly read the Antarctic Conservation Act of 1978 (U.S. Public Law 95-541), abide by the regulations set forth in the Act, and brief your staff accordingly. Comparable legislation for non-U.S. countries should be adhered to accordingly. Be mindful of your own actions and present the best example possible to the passengers.

2. Be aware that under the Act, it is prohibited to enter Specially Protected Areas (SPAs) and Sites of Special Scientific Interest (SSSIs) unless permits have been obtained in advance. Only those with "compelling scientific purpose" are allowed permits to enter SPAs, as any entry could "jeopardize the natural ecological system existing in such an area." SSSIs are "sites where scientific investigations are being conducted or are planned and there is a demonstrable risk of interference which would jeopardize these investigations." Permits to enter SSSIs are only granted if the "proposed entry is consistent with the management plan" for that particular site.

3. Enforce the IAATO Guidelines of Conduct for Antarctica Visitors in a consistent manner. Please keep in mind, however, that guidelines must be adapted to individual circumstances. For example, fur seals with pups may be more aggressive than without pups, and therefore passengers need to stay farther away; gentoo penguins are more sensitive to human presence than chinstraps; penguins on eggs or with small chicks are more easily disturbed than molting chicks.

4. Hire a professional team, including qualified, well-trained and experienced expedition leaders, cruise directors, officers, and crew. Place an emphasis on lecturers and naturalists who will not only talk about the wildlife, history and geology, but also guide passengers when ashore. It is recommended that at least 75 percent of the staff have previous Antarctic experience.

5. Hire Zodiac drivers who are familiar with driving Zodiacs in polar regions. Zodiac drivers should take care not to approach too close to icebergs or other floating ice, or glaciers where calving is a possibility, or to steep cliffs where snow or ice may suddenly slip down into the sea. They should also use caution not to disturb wildlife, which can be very sensitive to engine noise.

6. Educate and brief the crew on the IAATO Guidelines of Conduct for Antarctica Visitors, the Agreed Measures for the Conservation of Antarctic Fauna and Flora, the Marine Mammal Protection Act of 1972 and the Antarctic Conservation Act of 1978, and make sure they are consistently enforced. We encourage tour operators to give slide illustrated talks to the crew and offer guided tours ashore, in order to stimulate the crew's interest in Antarctica and to make sure that they also understand the need for the environmental protection of the region. Unsupervised crew should not be ashore.

7. Have a proper staff-to-passenger ratio. Ensure that for every 20 to 25 passengers there is 1 qualified naturalist/lecturer guide to conduct and supervise small groups ashore.

8. Limit the number of passengers ashore to 100 at any one place at any one time.

9. Brief all passengers thoroughly on the IAATO Guidelines of Conduct for Antarctica Visitors, the Agreed Measures for the Conservation of Antarctic Fauna and Flora, the Marine Mammal Protection Act of 1972 and the Antarctic Conservation

Act of 1978. It is imperative that passengers and crew be briefed about the Acts and Agreed Measures, as well as the specifics about the landing sites, prior to going ashore. Make certain that passengers understand both the ethical and legal responsibilities outlined in these documents.

10. When approaching whales or seals by ship or by Zodiac, the ship's officer on the bridge, or the Zodiac driver, should use good judgment to avoid distressing them.

11. Communicate your voyage itinerary to the other passenger vessels in order to avoid over-visitation of any site.

12. Give proper notice to all research stations: 72 hours advance notice and a 24-hour advance reconfirmation of the ship's estimated time of arrival at all Antarctic research stations.

13. Respect the number of visits which have been allocated by different stations, for example Palmer and Faraday, as agreed with the NSF and BAS, respectively. Comply with the requests of the station commander—for example, the commander at Arctowski requests that visits only be made in the afternoon.

14. Respect the work the scientists are conducting—do not disturb those working while visiting the stations.

15. It is the responsibility of the tour operator to ensure that no evidence of our visits remains behind. This includes garbage (of any kind), marine pollution, vandalism, etc. Litter must never be left ashore.

16. Follow Annex 5 of the Marpol Agreement. Retain all plastic for proper disposal on the mainland. Wood products, glass and metal must be compacted and disposed of well away from land or returned to the mainland. Ensure that incinerators, if used, are functioning properly.

17. Refrain from dumping bilges or treated sewage within 12 nautical miles of land or ice shelves, or in the vicinity of research stations where scientific research is taking place. This might inadvertently affect the results of scientific investigations, and could potentially harm the wildlife.

18. Respect historic huts, scientific markers and monitoring devices.

Senator KERRY. Let me begin with you. Is tourism in keeping with the fundamental concept of a pristine wilderness for peace and science?

Mr. SPLETTSTOESSER. It all depends on how you define——

Senator KERRY. What I want to know is whether there is potential contradiction to this concept, as an increasing number of tourists visit the Antarctic?

Mr. SPLETTSTOESSER. Maybe it depends on how tourism is defined. But if Antarctica and unspoiled environment, I would hate, frankly, to see the science programs kicked out, as well as anybody else. Because I think tourists, or the general public of the world, has a right to see a pristine environment; and if it is managed properly, I do not see anything wrong with it. So, I do not see it as contradictory.

Senator KERRY. Any other takers on that? Is everybody comfortable with a certain level of tourism, or is there a level?

Mr. MANHEIM. Mr. Chairman, I think when you start to have an 800-passenger, or maybe even 400-passenger vessels, offload their passengers at pristine wildlife breeding sites unaccustomed to those sorts of visits, you do start to infringe on the concept of a pristine wilderness. And moreover, you start to impact the very species that depend on that pristine wilderness.

Senator KERRY. What do you think if we were to establish certain limitations on where people can go and what they can do, creating in effect a designated area that will be, arguably, "pristine," but in relation to the overall size of the continent, wouldn't the impact be minimal?

Mr. MANHEIM. We undertook a study of tourism at the EDF a couple of years ago, and what we found was that most of the tour-

ist visits are concentrated at only a few sites in a couple of different regions of the continent.

And frequently, the sites that are visited are, of course, visited because wildlife occur there. And in some of those instances, there were visits of up to 30 occasions a year, within an hour or 2, or a day or 2 of each other.

Our view is that breeding penguins and other seabirds are going to be impacted by those kinds of concentrated, repetitive visits, as is scientific research nearby.

Senator KERRY. Mr. Splettstoesser, 12 tour vessels, I understand, will operate in the Antarctic waters this season. How many of those vessels are registered under nations that have signed the protocol?

Mr. SPLETTSTOESSER. I do not know the answer to that; but I know a lot of them are not registered in countries that are not party to the protocol, or party to the treaty.

Senator KERRY. What do you think we can do to deal with those vessels that are not under the jurisdiction of nations party to the protocol?

Mr. SPLETTSTOESSER. Well, Mr. Chairman, I think the same thing that the tour operators have been doing for years. The ships going south of 60, of course, are all obligated to respond to any kind of marine regulations, whether it is MARPOL or anything else, including south of 60.

All the chartering companies that place tour ships in the Antarctic, no matter what the country of registration, pass along all of the commonly accepted regulations for any other ships, as part of their contractual arrangements. These are passed along not only to the owners of the ships, the countries of registration, but also any passengers on the ship through contracts of carriage, no matter what the citizenry of the passengers.

So, in effect, they are all subject to—in this case, if S. 1427 becomes law, they would be subject to its regulations.

Senator KERRY. What do you think of the administration's proposal, that vessel operators have to agree to adhere to annex 4?

Mr. SPLETTSTOESSER. Well, I think I have more or less answered that by saying, the tour agencies—and, I think, anybody else who works in the Antarctica—should agree, have to agree, and they should agree with whatever the regulations are that pass; and if they are unable to live with them, they probably should not be there.

Senator KERRY. What does your organization think about citizen suits?

Mr. SPLETTSTOESSER. Nothing wrong with citizen suits. We had a big discussion about this, within the last couple of weeks as a matter of fact; and I noticed it is in your bill. I do not remember the reference to it.

But regardless—for many years, of course, the Antarctic treaty parties have had, you might say, a self-policing system which, in many respects, has worked; and with a few rare cases, I would say, may not have worked as well as it should have.

As long as the police force, let us say, is composed of knowledgeable and experienced individuals, credible individuals in many respects—and these days, people with scientific backgrounds—there

is no problem with that, because the right kinds of infractions can be observed properly and charged, and prosecutions can be defended.

Any other procedure than that could become something like a vigilante force, which could be composed of overzealous individuals who will shout "Wolf" at the first sign of any apparent infraction.

So, as long as citizen suits, or any other suits, are lodged appropriately and with scientific credibility, we see no reason for any problem.

Senator KERRY. Ms. Sabella, do the legislative proposals before us meet, in your judgment, the necessary balance between environmental protection and scientific research?

Ms. SABELLA. I guess in my judgment, S. 1427 gives a better shot at striking that balance.

Senator KERRY. Why? What are the distinguishing features that concern you?

Ms. SABELLA. Well, first of all, I think the regulatory structure that that bill puts forward, particularly giving the EPA the authority to implement the waste disposal annex, is very important. That will go quite a bit further than the proposal forwarded by the administration, in terms of protecting the environment.

Also, within that same provision, S. 1427 prohibits incineration, which we feel is very important. And also, as we have discussed earlier, applies secondary treatment requirements to the sewage outfalls at McMurdo.

Senator KERRY. Do you think there is compelling definitive data that suggests that it must be secondary treatment?

Ms. SABELLA. I do not know that there is compelling data. I do not know to what extent it has been examined. I do know that there was a report done in 1981, at the request of the National Science Foundation, called the "McMurdo Water Quality Study," that highlighted at that time a number of concerns about dumping sewage, as well as the content of the sewage emissions, effluents.

We also did some—Greenpeace also did some testing of the McMurdo effluent, a number of years back now, in 1989; and we found elevated levels of heavy metals.

As Bruce pointed out, earlier this year in front of—I believe it was earlier this year—at a hearing on the House side on the Boucher bill, Peter Wilkniss, who was the former head of the National Science Foundation, stated very clearly that this was the direction that the Foundation was taking. And we feel it is really necessary to go that way.

There are other countries that have wastewater treatment facilities in the Antarctic. The Italians have a very good wastewater treatment facility; and if you went to that station, they would be able to tell you exactly what was coming out of their pipe. And I would be happy to try to get further information for you on that.

Senator KERRY. I would be very happy if you would do that, in short order, if you can.

What do you think about granting NSF programmatic permitting authority, rather than issuing permits to individual researchers?

Ms. SABELLA. I think that is the situation that got us in the trouble that we find ourselves in now.

Senator KERRY. What if they did it under this new protocol and under new implementing language that includes NEPA; would this not facilitate the process and at the same time maintain the balance between environmental protection and scientific research?

Ms. SABELLA. I really do not think that, by turning over permitting and regulatory authority, or sharing that authority through a series of concurrences along the lines that your bill outlines, will unduly impair science.

As Dr. Lanzerotti pointed out, his panel—which was composed of scientists, many of which or almost all of which, have worked in the Antarctic—concluded that it is appropriate for the Science Foundation to gain the concurrence of other agencies with relevant expertise, when making permitting decisions.

Senator KERRY. Dr. Lanzerotti, I get a sense that you basically recommend against specific environmental standards?

Dr. LANZEROTTI. I am not sure I understand the question.

Senator KERRY. I am referring to the NRC report.

Dr. LANZEROTTI. Yes.

Senator KERRY. You recommend that the implementing legislation and the regulations ought to be based on substantive requirements?

Dr. LANZEROTTI. Yes.

Senator KERRY. And, that there should not be a prescription for meeting the requirements of the protocol. I am wondering what that really means. Is that saying, "Do not create specific environmental standards"?

Dr. LANZEROTTI. No, it does not say that. We wrestled a long time with that, and we wrestled in trying to explain it; and I am not sure I can do a very good job, other than what I have said here today.

But let me give a specific example, which I am not sure is specifically related to what you have just asked. But let me give you an example anyway. In the protocol, there is a specific provision for the requirement that no disposal of batteries be made in the Antarctic, which we address in our report. In the administration bill, they repeat that language.

However, the protocol could well be modified with regard to disposal of batteries. Because it would appear—if article II(1)(b) of the protocol was directed at the safe and ecologically sound disposal and removal of larger, more noxious batteries, rather than those used in research purposes for studies of the atmosphere or in flashlights for personal use, for example—it could be so modified. If legislation specifically said batteries were prohibited in the Antarctic, and the protocol then got modified to point out that personal flashlight batteries were OK, or flashlight batteries on balloons——

Senator KERRY. But that is getting very detailed.

Dr. LANZEROTTI. Yes.

Senator KERRY. Then, you are distinguishing that kind of detail from the standards that are established by NEPA or some other statute?

I wonder also if you are simply saying, "We should try to apply and live by these environmental principles, as they are laid out in article 3, but do not be more specific or more stringent than that." But you are not saying that?

Dr. LANZEROTTI. That is right.

Senator KERRY. But you are also saying, "Do not get down to the level of battery choices"?

Dr. LANZEROTTI. Yes, yes. But that is an important consideration.

Senator KERRY. Well, I do not think we do that. I do not think either of the implementing pieces in front of us do that; do they?

Dr. LANZEROTTI. The administration bill calls out "batteries" specifically, for example. I do not want to get hung up on a trivia, but if we are worried about the atmosphere in the Antarctic, we have to fly some balloons to study the atmosphere; and those balloons have to be powered, and those batteries are on there. And they are going to come down somewhere where you cannot retrieve them. And the only way we are going to be able to understand some of the atmosphere is to fly those balloons.

But that is a decision that the American public has to make, as to whether they want to understand the atmosphere. Then you have to ask the scientists, "What is the best technique to use?" I mean, the scientists are not advocating they want to fly balloons.

Senator KERRY. What is the process that you suggest we implement, in order to define what you have called the de minimis impact on science projects?

Dr. LANZEROTTI. Well, we have included some verbiage in the report; and we also have listed some examples. And it is partially, but not totally, based upon the time scales for natural variations. The determination of whether an impact is transitory should be based upon time scales of natural variations.

And that really is quite variable. We point out, for some ecosystems, the annual cycles of light and dark are one-time scale. We point out that a certain investigation in a penguin colony, for example, might be de minimus. But if you had a thousand such studies, all sampling in the same colony, it certainly would not be minor or transitory.

We go into some detail in the report, to try to give examples that would be illustrative, and may cover the issues that would arise in other specific instances.

Senator KERRY. I did not ask Mr. Scully or Dr. Sullivan what their reaction to that is, but we can follow up on that at some other point in time.

I would imagine there might be considerable resistance to establishing de minimis impacts which would not be subject to environmental impact assessments?

Dr. LANZEROTTI. Excuse me, I am sorry?

Senator KERRY. I said, I would imagine there might be considerable resistance to adopting such a specific charter.

Dr. LANZEROTTI. Such as?

Senator KERRY. Such as you have just described.

Dr. LANZEROTTI. Based upon this, time scales of natural variation?

Senator KERRY. Yes.

Dr. LANZEROTTI. Well, I mean, this was approached from a rather——

Mr. SCULLY. I do not wish to prolong things, Mr. Chairman. But first, the "minor and transitory" is not a substantive standard as

the threshold for environmental impact assessment. It is not a requirement that all activities meet that standard. It is, that is what triggers the environmental assessment. That is point 1.

Now, point 2, is that we are not trying to write everything that has to be done. If, as we have tried to do, you blend the protocol and NEPA, we have not tried to repeat all the provisions that exist under NEPA. In terms of how specific regulations under NEPA are done, that is where they should be addressed. But you should not try to include all the detail in the legislation.

Senator KERRY. I would agree with that. That would be my reaction, and that is what I was saying.

Dr. LANZEROTTI. Fine. I think that this is related to your previous question, and I would like to expand on that a little bit.

The committee absolutely recognized that standards have to be established consistent with those of the United States; no question. And if your question was questioning me on that, I am sorry if I had some problem.

Senator KERRY. Thank you for clarifying that point.

Dr. LANZEROTTI. But we do want to point out that the differences between the Antarctic environment and the more temperate environment of the United States for which standards have been established, which you explored with Dr. Sullivan, may be sufficiently significant, such that clean air and clean water standards used here may not be directly applicable. It may require some research to find out exactly what those should be, in a specific instance.

Senator KERRY. I have a number of other questions, but unfortunately, I have a discussion with the Attorney General that I have to attend to. Therefore, I will leave the record open until the end of this week and we will submit a few additional questions so we have your responses on the record. I want to have them on the record because we are getting some very detailed and useful answers.

Let me ask you Mr. Manheim, the administration says that the principles contained in article III are legally binding, and they provide the basis to address those situations that are not specifically addressed by the provisions of the protocol. You find that inadequate, why?

Mr. MANHEIM. Because, Mr. Chairman, in our view, the principles establish separate requirements from those already contained within the annexes; and their implementation should not be based on the exercise of discretion by an agency.

In other words, if there is something that is going to occur in Antarctica, it should be reviewed for compliance first with the principles; and second, with the various legal requirements that exist within the annexes.

Senator KERRY. So, how would you strengthen the implementation of article III?

Mr. MANHEIM. I would take the principles that have been set out in the statement of national policy in the administration proposal, and make that something other than a national policy, like a requirement.

Senator KERRY. What do you get out of that? What do you think you get, a stricter standard of enforcement?

Mr. MANHEIM. Well yes, you do. In fact, the principles call upon parties to modify, suspend, or cancel any operations inconsistent with those principles. They also require monitoring——

Senator KERRY. Why is that not adequate? Why is the statement of principles not adequate?

Mr. MANHEIM. You mean, a statement of national policy? I just do not think it is enforceable. I am not sure how you would——

Senator KERRY. Are you suggesting that, as a statement, it is not enforceable; but, if they were incorporated elsewhere in the implementing language they would be enforceable?

Mr. MANHEIM. To put it baldly, I think you require U.S. nationals to comply with the principles, prior to embarking for Antarctica. And you can do that through the environmental——

Senator KERRY. Why has that not happened, by virtue of signing the protocol, and ratifying it, and then passing implementing language?

Mr. MANHEIM. It should happen that way; except that, in this fashion, by placing it in a statement of national policy and then asking agencies to exercise their residual authority to implement this policy when they deem it appropriate, you do not achieve the requirement that activities—before they occur in Antarctica—are consistent with those principles.

Senator KERRY. I see.

Mr. MANHEIM. In other words, the agency may not——

Senator KERRY. So, in other words, what you are really saying is that while one could bring suit on those principles, you want a specific requirement in the implementing language that they must comply with the principles?

Mr. MANHEIM. Well, no. This is, I think it is——

Senator KERRY. The protocol is U.S. law.

Mr. MANHEIM. This is simply implementing the protocol, in a way that makes it enforceable. It is implementing the principles, in a way that makes them legally binding.

Senator KERRY. And you are suggesting that, absent that, there is a legal gap here?

Mr. MANHEIM. That is correct. That is correct, absent the exercise of discretion by an agency, which will take up to 2½ years or 3 years to pursue.

Senator KERRY. Dr. Lanzerotti, in your study you say that a special group should be established for general oversight and review of the activities, including major logistic facilities, environmental monitoring, NSF program actions, et cetera. Can you be more specific, as to what kind of group you mean? Is this advisory or is this an independent agency?

Dr. LANZEROTTI. Well, we felt that it was inappropriate for us to make recommendations on how the Federal Government should organize itself. But in our report, we give an example of what we think might be appropriate there; and I am rapidly searching for that recommendation here, so I can——

Senator KERRY. Well, we can look it up, do not worry.

Dr. LANZEROTTI [continuing] Quote it accurately. But we did make the recommendation for a special group and its function. But we did not make a recommendation of how it should be convened. We do give that example, as I said.

Senator KERRY. In other words, you want some kind of group or commission to oversee implementation and adherence to the protocol?

Dr. LANZEROTTI. Yes, but I would not use the words, "looking over the shoulder." I would say that this group would act in the best interests of the United States, to look at the entire program that the United States is pursuing.

Sarah just pointed out to me here, on page 64—may I read this, please?

Senator KERRY. Sure.

Dr. LANZEROTTI. [Reading.]

The committee believes that this last responsibility is best vested in a group, not a single agency. One option would be to expand the scope of the Antarctic Policy Group of the national Security Council, perhaps via standing committee, to include this responsibility.

But again, that is only a suggestion.

Senator KERRY. I understand.

Dr. LANZEROTTI. But it is to act in the best interests of the United States in the Antarctic, not looking over the shoulder of any particular agency or agencies.

Senator KERRY. I do not know if that is a distinction without a difference or not.

Dr. LANZEROTTI. Well, I would like to think that it is.

Senator KERRY. Well, you keep thinking that, and we will figure it out. I do not mean that to be taken——

Dr. LANZEROTTI. No, I absolutely understand you.

Senator KERRY. Thank you to everyone here today. I think we have some work to do.

We need to pull together some of the loose ends of this. I hope we can do that in short order and I look forward to working with various interested parties and appropriate parties, to get that done.

Dr. LANZEROTTI. Well, our committee is certainly willing to answer additional questions.

Senator KERRY. Well, we want to try to see if we can get this legislation on a fast track, if possible. It is a dirty word around here, but we will try.

We stand adjourned. The records stays open for another week. Thank you.

[Whereupon, at 4:40 p.m., the hearing was adjourned.]

APPENDIX

LETTER FROM BRUCE S. MANHEIM, JR., SENIOR ATTORNEY, ENVIRONMENTAL DEFENSE FUND

OCTOBER 27, 1993.

Senator JOHN F. KERRY,
U.S. Senate,
Washington, DC 20510

DEAR SENATOR KERRY: Thank you for the opportunity to testify at the October 20, 1993 hearing of the Senate Commerce, Science, and Transportation Committee on implementing legislation for the Protocol on Environmental Protection to the Antarctic Treaty. As I promised at that hearing, this letter sets out a more detailed explanation of the most significant flaws in the recently submitted proposal by the administration for implementing legislation. I request that this letter be included as part of the record for the October 20, 1993 hearing.

Specifically, this letter describes how the administration proposal: (1) seeks to overrule a recent federal appeals court decision by carving out a gaping loophole allowing agencies to avoid compliance with the National Environmental Policy Act (pgs. 2-5); (2) would weaken the Antarctic Conservation Act and other federal statutes protecting Antarctic wildlife by allowing incidental taking (pgs. 5-7); (3) eliminates that Act's mandate to create a comprehensive program governing all sources of pollution in Antarctica (pgs. 7-9); (4) would permit incineration to proceed in Antarctica and not allow the Environmental Protection Agency to veto that decision (pgs. 9-11); (5) authorizes discharges of untreated sewage into Antarctic waters pursuant to standards weaker than those in the Clean Water Act (pgs. 11-13); (6) falls to prohibit government vessels from discharging wastes, including plastics and garbage, overboard in Antarctica in contravention of the Act to Prevent Pollution from Ships (pg. 13); (7) narrowly construes and improperly implements legally binding requirements in Artide 3 of the Protocol (pgs. 13-15); (8) indefinitely defers any significant action to control a burgeoning tourist industry in Antarctica (pgs. 15-18); and (9) fails to include a citizen suit provision (unlike 16 other environmental laws) and does not authorize other federal agencies to bring enforcement actions against other agencies that violate the Act's provisions (pgs. 18-20).

AVOIDING COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act ("NEPA") requires all federal agencies to prepare an environmental impact statement ("EIS") in connection with any proposal for a major action "significantly affecting the quality of the human environment." 42 U.S.C. §4332(2)(C). Following passage of the Act in 1970, the National Science Foundation ("NSF") promulgated regulations applying this requirement to its decisions about actions in Antarctica. See 39 Fed. Reg. 3544, 3547 (Jan. 28, 1974) (EIS "requires assessment of the proposed action as it affects both the national and international environment.") (codified at 45 C.F.R. §640.3(e) (1977)). However, following issuance of Executive Order 12114 in 1979, it refused to comply with NEPA for its actions in Antarctica until it was forced to do so by a federal appeals court ruling earlier this year. Specifically, in *Environmental Defense Fund* v. *Massey,* 986 F.2d 528 (D.C. Cir. 1993), Chief Judge Mikva, writing for a unanimous panel of the U.S. Court of Appeals for the D.C. Circuit, concluded that NEPA governs NSF's decision to build and operate two incinerators in Antarctica. As the Court noted, if such actions were not subject to NEPA, then NSF's environmental decision-making would not be subject to public scrutiny and judicial review. As a practical matter, the absence of such oversight has resulted in NSF preparing fewer assessments and causing more environmental harm to the Antarctic environment.

Now, the administration proposal seeks to carve out a gaping loophole that will allow agencies such as NSF to avoid compliance with NEPA. Under Section 7(b) of its bill, the administration proposes to exempt from NEPA any "Antarctic joint ac-

tivity" where the Secretary of State, in cooperation with the lead U.S. agency planning such activity, determines that another Protocol party is "coordinating implementation of environmental impact assessment procedures for that activity." The administration proposal broadly defines the term "Antarctic joint activity" to mean "any federal activity in Antarctica which is proposed to be conducted, or which is conducted, jointly or in cooperation with one or more foreign governments, as defined in regulations promulgated by such agencies as the President may designate." Moreover, the proposal provides that determinations by the Secretary of State, "and agency actions and decisions in connection with assessments of impacts of Antarctic joint activities, shall not be subject to judicial review." If these provisions become law, the relevant agency (i.e., NSF) will no doubt seek to persuade another government to take the lead on "joint projects" and thereby avoid compliance with NEPA. This will be particularly problematic since arguably any number of activities undertaken in Antarctica are done so either jointly or in cooperation with other governments, and no one will have the right to go to court to question the federal agency's compliance with NEPA or even the Protocol's assessment provisions.

This sweeping exception from NEPA flies in the face of NSF's implementation of NEPA through the 1970's when it undertook a number of joint research projects with other countries and it prepared EISs under NEPA for at least two such efforts. See 38 Fed. Red. 23488 (Aug. 30, 1973), 39 Fed. Reg. 5508 (Feb. 13, 1974) (Dry Valley Drilling Project); and 39 Fed. Red. 39934 (Nov. 12, 1974) (Ross Ice Shelf Project). The State Department also prepared EISs under NEPA for two international agreements governing Antarctica. See 39 Fed. Reg. 30169 (Aug. 21, 1974) (Antarctic Seals Convention); 43 Fed. Reg. 4475 (Feb. 2, 1978) (Antarctic Marine Living Resources Convention). Indeed, the administration proposal is nothing short of an attempt to overrule the *Massey* decision. There, NSF argued that its incineration of wastes at McMurdo Station was undertaken in cooperation with other nations and that application of NEPA to its Antarctic activities would jeopardize joint projects. Moreover, NSF asserted that the Protocol's environmental assessment procedures somehow conflicted with, and would prevent compliance with, NEPA. Yet, as set out below in language from the Massey decision, both of these arguments were flatly rejected by the Appeals Court:

> Although NSF concedes that NEPA only seeks to regulate the decisionmaking process of federal agencies, and that this case does not present a conflict between U.S. and foreign sovereign law, NSF still contends that the presumption against extraterritoriality controls this case. In particular, NSF argues that the EIS requirement will interfere with U.S. efforts to work cooperatively with other nations toward solutions to environmental problems in Antarctica. In NSF's view, joint research and cooperative environmental assessment would be "placed at risk of NEPA injunctions, making the U.S. a doubtful partner for future international cooperation in Antarctica."

NSF also argues that the Protocol on Environmental Protection to the Antarctic Treaty, which was adopted and opened for signature on October 4, 1991, would, if adopted by all the proposed signatories, conflict with the procedural requirements adopted by Congress for the decisionmaking of federal agencies under NEPA. According to NSF, since NEPA requires the preparation of an EIS for actions with potentially "significant" impacts, while the Protocol requires an environmental analysis even for actions with "minor or transitory" impacts on the Antarctic environment, the two regulatory schemes are incompatible and will result in international discord.

We find these arguments unpersuasive * * * We are unable to comprehend the difficulty presented by the two standards of review. It is clear that NSF will have to perform fewer studies under NEPA than under the Protocol, and where an EIS is required under NEPA, it would not strain a researcher's intellect to indicate in a single document how the environmental impact of the proposed action is more than "minor" and also more than "significant."

More importantly, we are not convinced that NSF's ability to cooperate with other nations in Antarctica in accordance with U.S. foreign policy will be hampered by NEPA injunctions * * * Since NEPA imposes no substantive requirements, U.S. foreign policy interests in Antarctica will rarely be threatened, except perhaps where the time required to prepare an EIS would itself threaten international cooperation * * * or where the foreign policy interests at stake are particularly unique and delicate. Thus, contrary to NSF's assertions, where U.S. foreign policy interests outweigh the benefits of the EIS requirement, NSF's efforts to cooperate with foreign governments regarding environmental practices in Antarctica will not be frustrated by forced compliance with NEPA.

Applying the presumption against extraterritoriality here [thereby precluding application of NEPA] would result in a federal agency being allowed to undertake ac-

tions significantly affecting the human environment in Antarctica, an area over which the United States has substantial interest and authority, without ever being held accountable for its failure to comply with the decisionmaking procedures instituted by Congress—even though such accountability, if was enforced, would result in no conflict with foreign law or threat to foreign policy.

Clearly, like the Court of Appeals, the Committee should reject the administration's effort to avoid NEPA compliance for its Antarctic activities.[1]

ALLOWING INCIDENTAL TAKING UNDER THE ANTARCTIC CONSERVATION ACT

Under the Antarctic Conservation Act ("ACA"), NSF may only issue permits authorizing the taking of native mammals or birds for "the purpose of providing specimens for scientific study or scientific information, or specimens for museums, zoological gardens, or other educational or cultural institutions or uses." 16 U.S.C. § 2404(e)(2)(A)(i). However, because of the Bush Administration's insistence during the Protocol negotiations, Article 3(2)(c) of Annex II of the Protocol authorizes parties to issue permits for "taking" and "harmful interference" of Antarctic wildlife "to provide for the unavoidable consequences of scientific activities not otherwise authorized * * * or of the construction and operation of scientific support facilities." Hence, while the Protocol was meant to strengthen environmental protection in Antarctica, it contains a potentially sweeping loophole that would permit federal agencies such as NSF and the Coast Guard to engage in activities resulting in takings that are currently unlawful under the ACA and other federal statutes such as the Marine Mammal Protection Act and the Migratory Bird Treaty Act.

Unfortunately, the administration now proposes to incorporate this loophole into U.S. law by authorizing NSF, with the concurrence of NOAA, to permit taking or harmful interference "for consequences of scientific activities, or of the construction and operation of scientific support facilities, which the Director has determined are unavoidable."[2] (See Section 5(g)(3)(A)(iii)). In support of this provision, administration officials contend that incidental taking was never prohibited under the ACA. That assertion, however, conflicts directly with the Act's plain language and its legislative history. Indeed, as introduced, Section 6 of the bill that ultimately became the ACA provided that the Director of NSF could "by permit or regulation authorize such activities as he finds are necessary for the establishment, supply, and operation of stations in Antarctica."[3] However, following markup by the House Merchant Marine and Fisheries Committee, that exception was deleted. Hence, it can be presumed that Congress did not intend to permit takings of Antarctic wildlife incidental to the construction and operation of bases or to the conduct of research actions in Antarctica.[4]

Indeed, until only recently, NSF had interpreted the ACA to prohibit incidental taking (including harassment) of Antarctic wildlife in connection with research activities. In January 1988, it informed the Merchant Marine and Fisheries Committee that a scientist undertaking a survey of seals violated the Act when his helicopter flew too close to a breeding penguin colony and scattered the birds, exposing their eggs to scavenging skuas. Specifically, NSF advised the Committee that:

> The Division of Polar Programs has just completed its investigation of this incident, which involves a potential violation of the Antarctic Conservation Act * * * After reviewing all of the information related to the incident, we have concluded that the letter and intent of Section 670.4(a) of the ACA was violated. Although the disturbance was unintentional, it reflects errors of judgment by both the scientist and U.S. Coast Guard air crew involved. We have informed all involved of the importance we attach to the need for strict adherence to the ACA. See, Letter to Walter B. Jones, Chairman, House Committee on Merchant

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[1] The Committee should also reject other provisions in the administration proposal that would undercut NEPA compliance. These provisions include limiting NEPA compliance solely to Section 102(2)(C) even though other provisions in NEPA create obligations (Section 7(a)(1)(B)); exempting NEPA compliance in connection with any permitting decision under the Act (Section 7(h)); and creating an exception for emergencies that goes well beyond that provided in the Council on Environmental Quality regulations implementing NEPA (Section 7(e).

[2] This loophole may be even more troubling that it first appears because, under the administration proposal, it would not be subject to NEPA compliance. As a result, it is unclear whether the determination by the Director that the consequences of a particular action may or may not be avoidable will be accompanied by an analysis of alternatives to the proposed action.

[3] See H.R. 7749, 95th Cong., 1st Sess. § 6 (1977) in Antarctic Fauna and Flora Conservation Act: Hearings before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries, 95th Cong., 1st Sess. 255. (1977).

[4] See *Russello* v. *United States*, 464 U.S. 16, 23-24 (1983) ("Where Congress includes limiting language in an earlier version of a bill but deletes it prior to enactment, it may be presumed that the limitation was not intended.").

Marine and Fisheries, from Dr. Peter Wilkness, Division of Polar Programs, National Science Foundation, January 13, 1988.

Just last year, when NSF testified before the Merchant and Fisheries Committee, it again indicated that this act constituted a violation of the ACA.

Beyond this shift in interpretation, administration officials now also assert that a prohibition on incidental take from development and operation of coastal stations and other research activities would make it difficult to operate its research bases in Antarctica. Yet, NSF's own October 1991 Environmental Impact Statement ("EIS") for the United States Antarctic Program ("USAP") states that wildlife will not be taken by construction and operation at its coastal facilities.[5] For example, in describing impacts to wildlife at Palmer Station, that EIS states that there is "little likelihood that significant impacts would result from construction activities at the station itself." For McMurdo Station, that document states that there are "no plans to expand activities that would directly affect known populations or habitats. Therefore, impacts to the animals from continuation of USAP activities at McMurdo Station and the McMurdo Sound area would be insignificant." Similarly, NSF reported that "activities at small coastal field camps are not expected to affect marine or terrestrial habitats unless fuel is spilled." Accordingly, for all of these reasons, this weakening amendment within the administration proposal must be rejected.

ELIMINATING COMPREHENSIVE POLLUTION CONTROLS FOR ANTARCTICA

With passage of the ACA, Congress also established pollution control requirements for U.S. actions in Antarctica that go well beyond the waste disposal measures set out in the Protocol. Specifically, the Act makes it unlawful for any U.S. citizen "to discharge, or otherwise dispose of, any pollutant within Antarctica" unless authorized by permit or regulation. 16 U.S.C. §2403(a)(1)(E). To implement that prohibition, the Act directed NSF to promulgate regulations that "designate as a pollutant any substance which the Director [of NSF] finds liable, if the substance is introduced into Antarctica, to create hazards to human health, to harm living resources or marine life, to damage amenities, or to interfere with other legitimate uses of Antarctica." 16 U.S.C. §2405(b)(6). The Director was also ordered to "specify those actions which must, and those actions which must not, be taken in order to prevent or control the discharge or other disposal of pollutants, from any source within Antarctica." 16 U.S.C. §2405(b)(7). On the other hand, the Protocol only governs management of certain wastes in Antarctica and is entirely silent on other significant sources of pollution subject to regulation under the ACA.[6] Hence, as a threshold matter, the legislation must retain the ACA's non-discretionary directive for identification of "pollutants" and measures to control the discharge of such pollutants from any source in Antarctica.

As in S. 1427, the legislation should charge EPA with this responsibility. This is particularly important because NSF recently promulgated regulations under the ACA which essentially reiterate the measures set out in Annex III of the Protocol and which do not fully identify pollutants from any source in Antarctica. See 58 Fed. Reg. 34713 (June 29, 1993). Moreover, when promulgating those rules, NSF rejected certain recommendations raised by EPA because NSF was reluctant to modify its practices consistent with EPA's call for tighter measures. This problem is manifested by the following response of NSF to an EPA comment on the NSF proposal:

> EPA believes the rule should require secondary containment for tanks and container storage areas, requiring all tanks to have monitoring and leak detection devices (not just to the extent available), and require the preparation of contingency plans addressing potential accidental release or emergencies. The rule already requires permit applicants to submit contingency plans for controlling accidental releases. As to secondary containment and leak detection devices, it is not possible at this time for USAP to provide secondary containment or monitoring and leak detection devices for all tanks and container storage areas. NSF will consider what is appropriate as permit applications are submitted, but it has not made this suggested change to the final rule.

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[5] See National Science Foundation, Final Supplemental Environmental Impact Statement, October 1991. Id. at 5-48.

[6] Such pollution may stem from fuel spills (there have been more than 30 spills during the past decade alone at U.S. facilities); emissions from HC vapor loss from bulk petroleum storage tanks; fugitive dust generation from earthmoving and helicopter operations (causing a respiratory irritation known as "McMurdo Disease"); emissions of SO_2, NO_2, PM_{10}, HC, and CO from the McMurdo power plant and water distillation plant; emissions from vessels and their shipboard incinerators; and emissions, particularly of lead, from airplanes crossing Antarctica.

Clearly, as with virtually all other federal environmental statutes governing pollution, the implementing legislation must charge EPA—not NSF—with unilateral authority to control pollution in Antarctica.

AUTHORIZING INCINERATION IN ANTARCTICA

In addition to eliminating Congress' 1978 mandate for a pollution control program, the administration proposal (Section 6(e) (5)) would also permit incineration to go forward in Antarctica. That proposal is quite troubling since NSF itself has decided to terminate use of its incinerator on the continent—the only one operated there by a U.S. citizen or agency—because of its environmental effects. Specifically, in connection with its preparation of an environmental assessment pursuant to NEPA, NSF announced on June 14, 1993 that incineration in Antarctica is no longer its "proposed action." NSF's new Director of its Office of Polar Programs, Dr. Neil Sullivan, stated:

> In December 1992, NSF stated that it would reevaluate its decision to incinerate after collecting and analyzing additional incinerator emissions data. Subsequently, [after the *Massey* decision], NSF halted incineration while it further reviewed options for disposing of food and food-contaminated wastes. Since my arrival at NSF last month, the testing and analysis of the emissions monitoring data were completed. Most tested parameters were well below acceptable levels, but dioxin and hydrogen chloride emission levels were higher than anticipated. Although NSF could take steps to mitigate the levels of these emissions and reduce their environmental impact, I have decided that incineration is no longer the proposed action. NSF will still complete an ongoing environmental assessment of alternatives for disposal of McMurdo's food waste, including returning the waste to the United States.

In fact, the emissions testing data referred to by Dr. Sullivan demonstrated that NSF's "state of the art" incinerator releases concentrations of dioxins almost an order of magnitude greater than the EPA standard for large municipal waste incinerators. Nevertheless, even though this example makes it clear that any incinerator operating in Antarctica will despoil the environment, the administration proposal would still allow incineration to proceed there.

This is particularly troubling because the administration proposal fails to articulate a specific standard like that in the Clean Air Act governing municipal waste incinerators.[7] Rather, it calls for the development of standards based on "criteria" in that Act, "taking into account the unique circumstances of Antarctic logistics, operations, and the Antarctic environment." See Section 6(e)(5). Moreover, while the administration proposal would allow EPA to concur in regulations issued by NSF governing incineration, it would authorize NSF (following consultation with EPA) to make the threshold decision as to whether incineration should go forward in Antarctica in the first place. This scheme, which does not permit EPA to prevent incineration in Antarctica, appears to contravene the findings of the Committee on Antarctic Policy and Science established under the auspices of the National Academy of Sciences. Among other things, that Committee (which included a number of Antarctic scientists) suggested that federal agencies other than NSF should play a larger role than currently provided under existing law both in establishing regulations and issuing permits for U.S. actions in Antarctica. In pertinent part, the Committee recommended that:

> The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other federal agencies have significant and relevant expertise (e.g., Environmental Protection Agency for solid and liquid waste), the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.

In addition, the administration proposal is also inconsistent with another of the Committee's recommendations, which declared:

> Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, the Environmental Protection Agency would grant a permit to the National

[7] Section 129 of the Clean Air Act requires EPA to promulgate a standard that "reflects the maximum degree of reduction in emissions * * * determine[d] to be achievable for new or existing units. * * *" 42 U.S.C. § 7429(a)(2). In contrast, under the Protocol, wastes may be burned in incinerators "which to the maximum extent practicable reduce harmful emissions" and that standard is repeated in NSF's regulations. 45 C.F.R § 671.12(e).

Science Foundation for a wastewater treatment facility and conduct periodic inspections.

Despite this admonition, Section 5(g)(2)(E) of the administration proposal would authorize NSF, following "consultation" with EPA, to issue a permit to itself for incineration in Antarctica.

AUTHORIZING DISCHARGES OF UNTREATED SEWAGE INTO ANTARCTIC WATERS

At the same time, the Protocol's standard and existing U.S. requirements governing discharges into the ocean of sewage differ markedly. Under Section 403 of the Clean Water Act, discharges into the ocean may only be permitted by the EPA in compliance with strict criteria and standards relating to the effects of such disposal on the marine environment. 33 U.S.C. § 1343. In contrast, the Protocol authorizes parties to discharge sewage and domestic liquid wastes "directly into the sea * * * provided that: such discharge is located, wherever practicable, where conditions exist for initial dilution and rapid dispersal; and large quantities of such wastes * * * shall be treated at least by maceration." Notwithstanding these differences, the administration proposal now seeks to incorporate the Protocol standard into U.S. law even though NSF officials testified earlier this year that secondary treatment should be required for sewage discharges in Antarctica. Specifically, NSF's former Director of its Division of Polar Programs advised a Subcommittee of the House Science, Space and Technology Committee that:

> [T]here's no question that the primary treatment [of sewage outfall] that is allowed under the Treaty does not suffice. And at least secondary treatment—that is, the removal of all solids—has to be undertaken. I believe that we should follow the example of the Italian program. They have a pretty complete sewage treatment plant with biological rotating filters and everything. So that their effluent to the environment is about as clean as you can get it. I think we should strive to follow that example. It will be much more difficult. While they deal with 60 people in the summer, we have 1,200, but there's no question that this is a major issue that needs to be addressed in comprehensive fashion.[8]

studies demonstrating that untreated wastes discharged from McMurdo Station are, at times, entering the water intake for that base. See Howington, J.P., McGeters, G.A., Barry, J.P., and Smith, J.J. (1992). Distribution of the McMurdo Station Sewage Plume. Mar. Poll. Bull. 25: 324-327; and Venkatesan, M.I. and Mirsadeghi, KH. (1992). Coprostanol as Sewage Tracer in McMurdo Sound, Antarctica. Mar. Poll. Bull. 25: 328-332.

Beyond the inconsistencies between NSF's testimony earlier this year and the current administration position, the administration proposal is also inconsistent with the aforementioned recommendation of the Committee on Antarctic Policy and Science concerning agency responsibilities. As set out above, it specifically suggested that EPA should be responsible for permitting sewage discharges. Nevertheless, the administration proposal (Section 5(g)(2)) would authorize NSF to issue a permit to itself for sewage discharges, following "consultation" with EPA. Moreover, the administration proposal is also inconsistent with the Ocean Dumping Act, which confers sole authority on EPA to issue permits for dumping of wastes at sea. Since the mid-1980's, EPA has established a moratorium on ocean dumping of wastes in Antarctic waters. Nevertheless, Section 5(g)(2)(D) of the administration proposal would provide authority to NSF to issue a permit to itself (following consultation with EPA) for the "disposal of the by-product of sewage treatment by rotary biological contacter process or similar processes from land into the sea, provided that the Director has determined that such disposal does not adversely affect the local environment."

FAILING TO PROHIBIT GOVERNMENT VESSELS FROM POLLUTING THE SOUTHERN OCEAN

Section 9 of the Administration proposal would implement the Protocol's provisions on marine pollution contained within Annex IV through the Act to Prevent Pollution from Ships ("APPS"). 33 U.S.C. §§ 1901-1912. Specifically, subsection (c) of the proposal declares that "for the purposes of this chapter [APPS], the requirements of Annex IV of the Antarctic Protocol shall apply in Antarctica to all vessels over which the United States has jurisdiction, except for vessels listed in 33 U.S.C. 1902(b)." Because this latter section lists, among other things, "ships owned or operated by the United States when engaged in noncommercial service," the administration proposal would not apply the marine pollution provisions of the Protocol to vessels operated by the United States government in Antarctica. Beyond this troubling exception for government vessels, the administration proposal here again is plainly

[8] NSF may have reached this conclusion in light of recent published

inconsistent with existing United States law. indeed, under APPS, government vessels are, as of December 31, 1993. prohibited from disposing of plastics and garbage at sea. Yet, while the Protocol's marine pollution annex also bans the disposal of plastics and garbage in Antarctica, the administration proposal would not require government vessels to observe that requirement and it would appear to prevent application of the existing prohibition in APPS to such ships.

UNDERCUTTING IMPLEMENTATION OF ARTICLE 3 OF THE PROTOCOL

In addition to falling short of existing law, the administration proposal also fails to implement Article 3 of the Protocol. That Article directs each party to ensure that its nationals comply with certain "environmental principles" when planning and conducting any activity in Antarctica. Specifically, those principles require all activities in Antarctica to be planned and conducted so as to "limit adverse impacts on the Antarctic environment" and to "avoid" effects on climate, weather patterns, air and water quality, fauna and flora, endangered and threatened species, and important areas. At the same time, they require each party to plan and conduct activities in Antarctica on the basis of information sufficient to allow prior assessments of, and informed judgments about, their possible impacts; and to establish monitoring programs to verify predicted impacts and facilitate identification of possible unforeseen effects. Where an activity results in or threatens to result in impacts upon the Antarctic environment inconsistent with these principles, it must be modified, suspended, or canceled.

During negotiation of the Protocol, the Bush Administration successfully persuaded other nations to exempt Article 3 from the Protocol's compulsory dispute settlement procedures. To that end, it asserted that the principles were legally binding and should be enforced by each party against its nationals domestically. Yet, rather than doing so, the administration proposal further weakens Article 3 by only including them within a statement of national policy and providing the relevant agency with "residual discretionary authority" to implement them. To be sure, Section 13 of the administration proposal would create a petition process that allows interested parties to request the government to take action to address perceived problems. But that process may take up to 2½ years to complete. As a result, there is nothing in the administration proposal that allows the relevant agency to prevent an activity from going forward in Antarctica that may be inconsistent with Article 3. Yet, despite that gap, the administration continues to assert that its proposal properly implements Article 3—an interpretation that is ultimately based on its belief that the Article does not establish legally binding requirements separate and independent from those contained within the Protocol's annexes.

The administration's interpretation of Article 3 flies in the face of the plain language of the Protocol and essentially renders the provision's principles superfluous. Moreover, it is inconsistent with the recent conclusion of the NAS Committee on Antarctic Policy and Science. It declared:

> A point of controversy that has emerged in discussions of the Protocol's implementation is whether Article 3, Environmental Principles, imposes substantive legal obligations, over and above the more specific rules in the Annexes. The Committee believes that Article 3 embodies principles of stewardship that go beyond the specific rules and procedures in the Annexes. Therefore, in becoming a party to the Protocol, the United States should seek to implement fully the principles of Article 3, including those concerning the decisionmaking process for permitting particular activities in Antarctica. Implementing legislation should recognize and incorporate the environmental principles of the Protocol (Article 3) so that agencies will be directed firmly along their administrative pathways. As the same time, however, these principles should be seen as too general to create specific legal requirements for individuals acting in Antarctica in the absence of some process or duty otherwise imposed by the legislation.

Accordingly, the implementing legislation must expressly make it unlawful for any party to conduct an activity in Antarctica inconsistent with the principles of Article 3 and this provision must be enforced through a permitting scheme. Only in this way can the U.S. fulfill its obligation to modify, suspend, or cancel any activity planned or conducted in Antarctica that is inconsistent with the principles of Article 3.

DEFERRING ACTION ON A BURGEONING ANTARCTIC TOURIST INDUSTRY

Although remote and generally inhospitable, Antarctica is now visited by thousands of tourists each year who wish to see the continent's pristine environment before it could be despoiled. While most tourists are seriously concerned about protecting Antarctica, their visits are often localized, repetitive, and frequently occur at

breeding grounds for seals, penguins, and other seabirds. Such visits place additional stress on these species, and could cause animals to abandon their breeding sites or increase the vulnerability of their eggs and young to predation. Indeed, the potential for such impacts is heightened by a significant increase in the number of tourists visiting Antarctica during the past decade.[9] During the 1982/83 season, approximately 721 tourists visited Antarctica. Approximately 6,500 tourists reportedly visited Antarctica during the 1992-93 season. While these figures may appear small when compared to the total number of visitors visiting other parts of the world, it must be emphasized that most Antarctic tourist visits occur at only a few sites during a relatively short period of time (approximately three months) when Antarctic wildlife are breeding. At the same time, it must be noted that the Antarctic seaborne tourist industry is changing from one involving small expedition ships to vessels capable of carrying up to 800 passengers.

In anticipation of the potentially adverse impacts from a burgeoning tourist industry in Antarctica, a number of tour companies have formed the International Association of Antarctica Tour Operators (hereafter "IAATO") and pledged to follow certain voluntary guidelines. Those guidelines are based, in part, on earlier Treaty recommendations relevant to tourism. While that effort was a welcome development, it is not sufficient to govern a growing U.S. tourist industry in Antarctica. In fact, the IAATO guidelines do not constitute legally enforceable requirements. This is evidenced by one IAATO member's consistent violations of two rules set out in the IAATO guidelines, which require tour operators to (1) "ensure that for every 20-25 passengers there is 1 qualified naturalist/lecturer guide to conduct and supervise small groups ashore" and (2) "limit the number of passengers ashore to 100 at any one place at any one time." Despite these guidelines, NSF's observer program documented clear violations two years ago by one company—a charter member of IAATO. Although IAATO testified last year that non-compliance would result in revoking membership, the same company again operated in Antarctica this past year as a member of IAATO.

Unfortunately, despite the threat of increasing tourist activities in Antarctica, the administration proposal largely defers action on any significant measures to prevent environmental impacts. To be sure, the Protocol requires tour operators to prepare environmental impact assessments In connection with their expeditions to Antarctica. But the administration proposal would only require the EPA to promulgate regulations for nongovernmental expeditions, consistent with Annex I of the Protocol, within 24 months of enactment of the implementing legislation. Beyond that delay, the administration proposal makes no attempt to resolve outstanding legal issues concerning compliance with and enforcement of this requirement for tourist expeditions. One such issue concerns determinations that a particular expedition does not have "more than a minor or transitory impact" on the environment and therefore the operator need not prepare a comprehensive environmental evaluation. The administration proposal offers no guidance as to who makes such determinations and who as the right to challenge such findings. Ultimately, EDF believes that an agency such as NOAA or EPA must be responsible for reviewing such determinations and that finding must be subject to judicial review.

Moreover, while assessment of the environmental impact of tourist expeditions will clearly be useful, the EIA process alone only creates procedural requirements. Hence, even if a tour operator documents environmental impacts, there is nothing in the EIA provisions that require that operator to avoid or mitigate such impacts. Here too, the administration proposal is inadequate. It only calls for a two year study to be undertaken by the State Department "to determine whether or not additional measures should be taken with respect to Antarctic tourist activities." See Section 12. Indeed, that proposal falls short of what the U.S. tourist industry itself has testified is necessary for environmental protection in Antarctica. Last year, a representative from IAATO testified before the House Merchant Marine and Fisheries Committee that it supported creation of a permitting scheme to regulate tourism in Antarctica. Specifically, in response to a question from the Committee concerning IAATO's support for a permitting scheme administered by NOAA to govern tourist operations, Mr. Jolin Splettstoesser stated:

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[9]Total numbers of tourists visiting Antarctica during just the past three seasons for which data are available (1989-90, 1990-91, and 1991-92) were 2581, 4842, and 6495. Virtually all of these tourists, many of whom were either American or travelled to Antarctica on U.S. excursions, toured Antarctica aboard ships. While the total number of Antarctic tourists may seem small when compared to tourism in other parts of the world, it must be emphasized that tourist expeditions in Antarctica are concentrated in a relatively few, small wildlife sites during the breeding season. See Enzenbacher, Antarctic Tourism and Environmental Concerns, 25 Marine Poll. Bull. 258 (1992).

"A permitting scheme should be welcomed by all, not only tour operators but anyone working in Antarctica, because it provides for a standardized procedure with necessary control of all activity. Only in this way can responsible tourism, and other activities, be successful in efforts to minimize impacts on the vulnerable environment of Antarctica. The National Oceanic and Atmospheric Administration already has experience in sponsoring research programs in Antarctica, and would provide the experience and leadership role required for the permitting responsibility."[10]

One need only look at impacts from uncontrolled tourist operations in the recent past to conclude that a regulatory program should be established. These impacts include an oil spill on the Antarctica Peninsula from an Argentine supply vessel carving 81 tourists (including approximately 40 U.S. citizens); helicopter flights sponsored by a U.S. tour company that reportedly scattered penguins in terror on each landing and take-off; and disruption of a lumber of sensitive wildlife breeding sites by large groups of tourists. In light of the dramatic growth in Antarctic tourism, it is clear that a regulatory Urogram should not await an additional study or the exercise of an agency's discretionary authority. Indeed, while the Protocol may contain general prohibitions against certain tourist activities, it does not specify minimum viewing distances for Antarctic wildlife; limit the frequency, size, and duration of visits to sensitive wildlife sites; require tour operators to utilize an appropriate number of certified staff to supervise such visits; or establish a program of coordination, monitoring, observation, and reporting for all U.S. tour operator visits to Antarctica. The implementing legislation should direct NOAA to do this.

CITIZEN SUITS AND FEDERAL AGENCY ENFORCEMENT

As the Committee well knows, NSF has been slow to implement certain of its nondiscretionary duties under the ACA. Indeed, almost 15 years passed before NSF promulgated mandatory regulations governing pollution in Antarctica.[11] Of course, in the absence of such regulations, NSF's facilities in Antarctica seriously contaminated the environment with PCBs, heavy metals, asbestos, and dioxins. And, even if regulations outlawing the activities that resulted in this pollution had been in place, it is rather unlikely that NSF would have brought enforcement actions against itself to prevent such problems. Indeed, NSF has refrained from bringing enforcement actions against others who clearly violated the ACA when they scattered penguins in terror during helicopter flights or illegally entered internationally protected areas. To be sure, in testimony before the Merchant Marine and Fisheries Committee last year, NSF stated that its Inspector General had found its enforcement activities under the ACA to be "generally fair and in keeping with the overall intent of the ACA." However, NSF officials failed to apprise the Committee that the NSF Inspector General went on to criticize the agency over its failure to "require implementation of more formal processes" and to designate, train, or empower any officers to enforce the ACA.[12]

Nevertheless, while the administration proposal largely confers regulatory and permitting responsibilities to NSF, it does not create any mechanism to ensure that NSF and other agencies properly implement and enforce the legislation. In this respect, it will be important for the legislation to include a provision that allows citizens to bring lawsuits and which addresses, to the extent possible, standing problems created by *Lujan* v. *Defenders of Wildlife,* 112 S.Ct. 2130 (1992). As in other citizen suit provisions, the legislation should authorize any citizen to commence a civil action in U.S. District Court against any person (including the United States or any other governmental instrumentality or agency) who is alleged to be in violation or any standard, limitation, regulation, permit, or order issued the Act; and

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[10] See Antarctic Treaty Protocol on Environmental Protection: Hearings before the Subcomms. on Ocean., Great Lakes and the Outer Contin. Shelf, Coast Guard and Navig., and Fisheries and Wildlife Conserv. and the Envt., of the House Comm. on Merchant Marine and Fisheries, 102d Cong., 2d Sess. 162 (1992).

[11] At the same time, the other agency charged with issuing regulations under the ACA—the State Department—has failed to promulgate mandatory regulations governing advance notifications under Section 7 of the ACA. That Section declares: "The Secretary of State shall prescribe such regulations as may be necessary and appropriate to implement, with respect to United States citizens, paragraph 5 of Article VII of the Treaty pertaining to the filing of advance notifications of expeditions to, and within, Antarctica." 16 U.S.C. §2406.

[12] See Office of the Inspector General, National Science Foundation, Semiannual Report to the Congress. Number 6: October 1, 1991-March 31, 1992, at 25-26.

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against any federal agency where there is alleged a failure of that agency to perform any act or duty under the Act which is not discretionary.[13]

Although some agencies have disputed the need for a citizen suit enforcement scheme, and that appears to be reason why the administration proposal is silent on this subject, the Department of Justice recently touted the importance of such provisions. in pertinent part, it stated that:

> These provisions represent a recognition by Congress that the enforcement of the nation's environmental laws is too important to leave to the exclusive province of the Federal Government and that a valuable public service is performed when private citizen groups join in the effort to secure compliance with environmental obligations.

Hence, a citizen suit enforcement provision would ensure that the relevant federal agencies promulgate regulations in a timely manner and that they and their permit applicants comply with the standards and regulations established under the Act. Moreover, it would be consistent with the President's campaign promise to "support legislation that allows ordinary citizens to sue federal agencies that ignore environmental laws and regulations designed to preserve our environment—so government bureaucrats are made accountable for proper and effective environmental law enforcement." [14]

Finally, in addition to providing EPA and NOAA with authority to promulgate regulations and issue permits implementing the Protocol, the implementing legislation must contain a provision allowing those agencies to bring enforcement actions against NSF and other federal agencies operating in Antarctica. Needless to say, the administration proposal does not contain such a provision. A model for this provision may be found in the Federal Facilities Compliance Act, which authorizes EPA to bring actions against other federal agencies for violations of federal environmental statutes.

Once again, thank you for the opportunity to present testimony to the Committee and for keeping the record open so as to allow for this more detailed analysis.

Sincerely,

BRUCE S. MANHEIM, Jr.,
Senior Attorney.

QUESTIONS ASKED BY SENATOR KERRY AND ANSWERS THERETO BY MR. SCULLY

Question. How does the Administration proposal address environmental impact assessment in Antarctica, including with respect to joint activities?

Answer. Section 7 of the Administration proposal provides for environmental impact assessment of activities in Antarctica. Section 7(a)(1)(B) makes clear that the environmental impact assessment obligations contained in section 102(2)(C) of the National Environmental Policy Act (NEPA) apply to proposals for federal agency activities in Antarctica, as specified in the section.

In many respects, the requirements of the Environmental Protocol to the Antarctic Treaty with respect to environmental impact assessment are stricter than NEPA's requirements. The Administration's proposal makes clear that NEPA and the Protocol apply consistently with one another. In particular, it provides that, where there is some question as to whether NEPA would satisfy the Protocol's standards, the Protocol's standards apply.

—For example, the Protocol has a different standard for requiring a comprehensive environmental evaluation (CEE) than NEPA's standard for preparing an environmental impact assessment (the Protocol requires a CEE for all activities likely to have "more than a minor or transitory impact"; NEPA requires an EIA for major federal actions with a "significant" effect). Section 7(a)(2)(C) of the Administration's proposal requires agencies to prepare a CEE for proposed federal activities likely to

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[13] At least 16 environmental laws contain citizen suit provisions. These laws are the (1) Clean Air Act (42 U.S.C. § 7604); (2) Clean Water Act (33 U.S.C. § 1365); (3) Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9659); (4) Deep Seabed Hard Mineral Resources Act (30 U.S.C. § 1427); (5) Deepwater Port Act (33 U.S.C. § 1515); (6) Emergency Planning and Community Right-to-Know Act (42 U.S.C. § 1 1046(a)(1)); (7) Endangered Species Act (16 U.S.C. § 1540(g)); (8) Energy Policy and Conservation Act (42 U.S.C. § 6305); (9) Hazardous Liquid Pipeline Safety Act (49 App. U.S.C. § 2014); (10) Ocean Thermal Energy Conversion Act (42 U.S.C. § 9124); (11) Outer Continental Shelf Lands Act (43 U.S.C. § 1349); (12) Powerplant and Industrial Fuel Use Act (42 U.S.C. § 8435); (13) Resource Conservation and Recovery Act (42 U.S.C. § 6972); (14) Safe Drinking Water Act (42 U.S.C. § 300j-8); (15) Surface Mining Control and Reclamation Act (30 U.S.C. § 1270); and (16) the Toxic Substances Control Act (15 U.S.C. § 2619).

[14] See The Clinton-Gore Plan on Protecting Our Environment.

have more than a minor or transitory impact and, to avoid any possible reading that "minor or transitory" is a less protective standard than the standard of NEPA, section 7(a)(4)(B) provides that activities that may have a "significant" impact within the meaning of NEPA are deemed to fall within the category of activities likely to have more than a minor or transitory impact.

—Since the Protocol applies to all activities in Antarctica, including non-governmental activities, while NEPA only applies to "major federal actions", section 7(c) requires the Environmental Protection Agency to promulgate regulations to provide for the environmental impact assessment of non-governmental activities.

—The Protocol prohibits a Party from deciding to proceed with an activity with more than a minor or transitory impact until the other Parties have had an opportunity to hear from the Committee for Environmental Protection (established by the Protocol) and consider the CEE at an Antarctic Treaty Consultative Meeting. NEPA, of course, does not contain such a requirement, so section 7(d) of the Administration's proposal incorporates the Protocol's requirement.

Environmental impact assessment of activities carried out jointly between the U.S. government and another government raise difficult issues, under both NEPA and the Protocol. The Administration is currently engaged in a comprehensive review to environmental impact assessment of extraterritorial activities, including activities conducted with other governments. The Administration believes that environmental impact assessment of joint activities in Antarctica should be undertaken consistently with the conclusions of that review.

Therefore, section 7(b) leaves to regulation how environmental impact assessment of such activities in Antarctica would be carried out. In particular, it provides that agencies designated by the President would define what activities are "joint" within the meaning of the legislation. The Administration would define the term in accordance with the outcome of its review.

It is possible that the definition would provide that some or all of the activities undertaken by the U.S. Government with another government would not be considered "joint" for the purposes of the legislation. If the definition provided that some such activities were "joints for the purposes of the legislation, then section 7(b)(3) would exempt such activities from judicial review in the United States. And, under section 7(b)(2), the legislation's requirements would not apply if another government was coordinating the environmental impact assessment of the activity.

Question. Would the Administration proposal weaken the prohibition on takings of Antarctic fauna and flora now contained in the Antarctic Conservation Act?

Answer. The Administration proposal implements the provisions of the Protocol, including Annex II on Conservation of Antarctic Fauna and Flora. Annex II prohibits takings and harmful interference except in accordance with a permit. It defines "take" as to kill, injure, capture, handle or molest a native bird or mammal, or to remove or damage such quantities of native plants as to significantly affect their local distribution or abundance. "Harmful interference" includes activities that disturb concentrations of birds or seals, significantly damage concentrations of native plants, or result in significant adverse modification of the habitat of any species or population of native mammal, bird, plant, or invertebrate.

Permits for taking or harmful interference may be issued only to provide specimens for scientific purposes, to provide specimens for museums, zoos or other cultural or educational institutions, or to provide for unavoidable consequences of other scientific activities or the construction and operation of scientific support facilities.

Annex II of the Protocol strengthens existing Antarctic Treaty measures—the Agreed Measures for the Conservation of Antarctic Fauna and Flora, adopted by the Antarctic Treaty Consultative Parties. (The United States has implemented the Agreed Measures through the Antarctic Conservation Act of 1978.) Annex II of the Protocol, inter alia, broadens the definition of taking, adds specific prohibitions relating to native plants, and strengthens controls on harmful interference.

Annex II also clarifies the requirements relating to takings and harmful interference incidental to the construction and operation of scientific support facilities. The Agreed Measures prohibited takings without a permit, but did not address takings incidental to construction and operation of scientific support facilities. Some have argued that this omission should be read as prohibiting such takings completely. This is a misreading of the Agreed Measures. Such takings are an unavoidable consequence of the construction and operation of scientific support facilities, at least in coastal areas of Antarctica. The Antarctic Treaty Consultative Parties, including the United States, clearly did not intend to shut down all such facilities as a result of the operation of the prohibition on takings.

The Parties addressed this question in the Protocol. Annex II provides that such incidental takings are prohibited without a permit. it also provides that the issuance of permits shall be limited to ensure that no more native mammals, birds, or plants

are taken than are "strictly necessary," that only small numbers of native mammals and birds are killed, that in no case more are killed than can be replaced by natural reproduction in the following season, and that the diversity of species, including their habitats, in Antarctica is maintained.

The Administration's proposal would authorize the National Science Foundation to issue permits for taking or harmful interference in the circumscribed cases for which permits can be issues. The written concurrence of the National Oceanic and Atmospheric Administration would be required before a permit could be issued for taking incidental to the construction or operation of a scientific support facility.

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